Hugh Cecil Earl of Lonsdale.

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THE STRAW YARD

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THE HORSE:

ITS VARIETIES, BREEDING, AND MANAGEMENT.

BY H. D. RICHARDSON,

AUTHOR OF "DOGS," "PIGS," "THE HIVE AND THE HONEY-BEE," "DOMESTIC FOWL," "THE PESTS OF THE FARM," ETC.

A NEW EDITION, REVISED AND ENLARGED

BY M. M. MILBURN.

WITH ILLUSTRATIONS ON WOOD, BY W. OLDHAM AND HARRISON WEIR.

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THE HORSE.

INTRODUCTORY.

The great improvement which has taken place in every branch of rural management since the first edition of Mr. Richardson's little book on the Horse appeared, has rendered its enlargement so necessary that the work may now be considered as an original book, so extensively has it been recast. Vital chemistry, animal physiology, and the more general application of science to the veterinary art, which were formerly only known to the heads of that profession, are now much more extensively studied, with much advantage to the breeders, dealers, and owners of that friend of mankind, the horse.

In the present edition, the horse will be found classified according to his uses. Especial attention has also been directed to the management of farm horses,—a branch of information which Mr. Richardson did not attempt to enter on, but which is one of vast importance when it can be treated practically, and by a competent practical authority.

Stable management, the stable itself, and the general treatment of the Horse, with a view to the prevention of disease, and increasing his capacity for work, have also in their turn received careful consideration. It has not been thought desirable to enter at any great length on the symptoms and treatment of diseases, to which the horse, from his artificial condition, is so peculiarly liable; in the words of the preface to the original work, the reader is "presented with a rapid summary of the most frequent and important diseases and accidents to which the animal is subject, describing their premonitory symptoms, and, in all cases where it can avail, instructions have been given for the preliminary treatment useful to be adopted until professional assistance can be procured. To do anything beyond this would be not merely useless—it might be mischievous. Veterinary

surgeons are now to be found without difficulty in nearly every district, and written instructions, however minute, could supersede their services in no case beyond the most ordinary attacks, which most stable attendants are familiar with the mode of curing. In all such simple attacks, however, we have given the most efficient remedies; while in cases of a more complicated nature, the proper treatment of an animal requires a thorough knowledge of his anatomy and physiology; and the practical study of his pathology is no less necessary than it is for the treatment of a human being under similar circumstances.

"As fully nine-tenths of the morbid affections to which horses are subject may be attributable to erroneous systems of management, it seemed more profitable to the reader to devote our space to describe the best modes for the *prevention* of disease, by persuading keepers of horses to substitute correct systems of management for incorrect; minute details have, therefore, been given connected with stable management, feeding, grooming, and whatever bears more immediately on the *preservation of the animal in health*;—on what, in short, is called by medical writers, *hygiène*. Some remarks relative to these matters —and on the best modes of correcting or curing certain *vices* or *bad habits* so frequently incident to horses—will be found useful. It is only where brutality and ignorance take the place of kindness and judgment,—where from being a willing servant the horse is degraded into a fettered slave,—that the naturally noble gentleness of his nature is displaced by vice or insubordination."

It is probable that the readers of this little book will chiefly be found among those who have had very little opportunity of learning much about horses, or who wish to recal the knowledge they possessed on the subject earlier in life, rather as a source of enjoyment, than where economy in the management of the horse is a matter of importance. For the benefit of this class, our remarks have been rendered as plain and practical as possible.

In a commercial country like ours, there are thousands annually who find themselves, for the first time, in a position to keep a horse or two. The pretension every Englishman has to understand, instinctively, as it were, all the mysteries of horse flesh, adds largely to the difficulty which persons so situated must naturally encounter before they really understand the subject. They are usually as much ashamed to ask questions on this subject as if ignorance of one of the most intricate branches of knowledge were as disgraceful as picking pockets. For the PRIVATE READING of this class—for the benefit of gentlemen of middle age who are ordered by medi-

cal advisers to take exercise on horseback—and for the tradesman whose increasing business requires the use of horses, we shall offer such advice as our own experience has furnished us with, in purchasing and keeping a horse; while for the benefit of the breeder and amateur farmer we shall add the best practice and experience in breeding we have been able to procure.

There is a class of persons, and that by no means a small one, who can only procure a horse by purchase, and many of these may refer to our little book for information "how to buy a horse." This is a much vexed question, and like many others, is easier asked than answered. A gentleman living in the country, with the usual attendants of a country house about him, will have no great difficulty in providing for his wants; for, if he does not inhabit a breeding county himself, he is pretty sure to have friends who do, and who will be only too glad to recommend a suitable animal from the stock of one of their breeding neighbours, already half broken, which his own groom can easily finish, and form a *mouth* for. In towns, and especially in London, the case is different: to buy a horse in London, which, in the words of the advertisement, has "never been out of the hands of the breeder," would entail endless trouble on the purchaser, with the fair chance of a broken neck. What then is the town buyer of a horse to do, in order to supply his wants?

In London there is never any difficulty in supplying such wants, if you can make up your mind to take the proper steps. There are dealers in every class of horses, with whom you may treat with perfect safety, if you will only candidly state your particular wants to them. You will not get a *bargain*, for they are too 'cute for that; nor is it reasonable to expect it from a dealer; they go to great expense to provide for your wants—run great risks, for nothing is so uncertain, even with the best judgment, as horse-flesh, and dealers frequently give high prices for horses which turn out worthless, while their own reputation prevents them from thrusting any such animals into their customers' hands. Hence there is a sort of poetical justice in their occasionally meeting with an unexpected prize, the profits of which they appropriate to themselves. If you want a first-rate hunter or hack, and price is no object, go to Anderson's, Quartermaine's, or some other well-known west-end dealer. If you want one of good figure, without too many requirements of excellence, and some £60 is your mark, there is Dyer's, Osborne's, Collins's, and Dyson's, where you can be supplied, with perfect certainty that no improper advantage will be taken of you.

Again, if you are inclined to run some risk, and trust to your own or to a friend's judgment, you may suit yourself at a much smaller sum, at Tattersall's, Dixon's, or Aldridge's, where very shapely and useful animals are sometimes picked up; but on no account go beyond £25 to £30, at either of these places, unless you have some previous knowledge of the animal. You buy there, knowing nothing of the seller, and, although you *may* get a good one for these sums, you have no reasonable hope of getting a better for a larger sum.

Then you have the daily column of horses to sell in the *Times*—said to be the most deceitful of all; we know not why, for it seems to us that the very first step a *bona fide* seller would take to get rid of a horse he did not require any longer, would be to advertise him. It is certain, however, that many of the horses so advertised are made up for sale, and you will rarely get a TRIAL of one of these horses until you have paid your money. When you have parted with that, you know your security for it,—you have the horse.

LONDON, FEBRUARY, 1852.

CHAPTER I.

Section I.—Anatomy of the Horse.

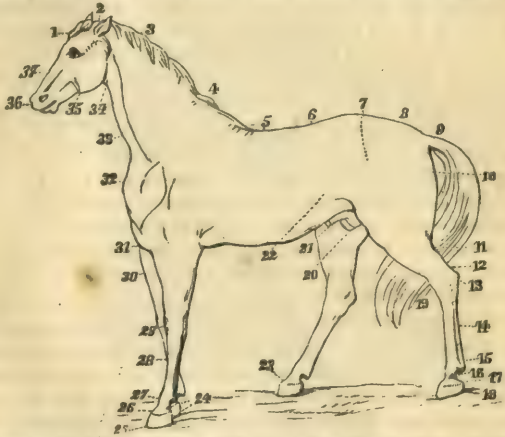
Of all quadrupeds the horse presents in his aspect the most perfect symmetry of form, and adaptation of part to part; his finely-arched back, his flashing eye, his expanded and almost transparent nostrils, his flowing mane, and his gallant crest, his wavy tail and powerful quarters, all present so many points of grandeur and beauty, calculated to rouse the admiration even of the most insensible beholder.

But we must not rest our admiration of this noble animal on his external appearance and form alone; they bear a secondary interest only to his other and nobler qualities of disposition, of docility, and of sagacity, which it requires but a brief acquaintance to appreciate. His services in war, in the chase, in travel, and last, but by no means least, in agriculture, are familiar instances of those qualities on which we will not dwell. To enumerate how he relieves man from the curse of labour, how he tills his fields, carries his person, conveys his comforts, his necessaries, his luxuries, and all this with steadiness, with intelligence, often with affection, would exceed our space to describe, but, excepting the dog, we may assert that there is no animal which so fully enters into the wishes, the wants, and the commands of his master, comprehending even his thoughts, and sympathizing with his animal spirits.

The genus Equus includes, besides the horse, the ass, the zebra, and quagga,—which all resemble each other in the structure of the skeleton, the number and form of their teeth, and in the digestive organs,—their chief points of difference being length of ears, difference of hair, especially in the mane and termination of the tail, in the external markings, and general expression—the generic character is as follows: twelve fore-teeth, the upper six erect and parallel, the lower six more prominent; tusks solitary and remote; teats inguinal, and two in number; breathes solitary through the nostrils, not through the mouth; fights by biting, pawing, and kicking. The horse belongs to Cuvier's sixth order of the class mammalia, the pachydermata, and the ninth genus. The specific character of the horse is thus described by Cuvier:—Six incisors in each jaw, the canines, and six molar or cheek teeth, furrowed on both sides, with flat corners, and several ridges of enamel. Between the cheek and canines is a void space on each side, with a space between them, extending across the mouth, which is known to veterinarians as the "bars." The upper lip is susceptible of considerable motion; the eyes large, pupil oblong, ovate, placed laterally;

sight good; ears small, pointed, and erect, possessing great power of mobility, which renders the hearing very acute; feet possessing only one toe, covered with a thick hoof; but under the horn skin of the hoof are the rudiments of other toes; tail furnished with long hairs; two teats, inguinal; stomach small, simple, and membranaceous; intestines and cœcum very large.

The horse may, for our purpose, be divided into three structural parts,—the HEAD; the CHEST, or TRUNK; and the EXTREMITIES, or LEGS. All these parts of the horse should be in strict uniformity and perfect



1, Forehead. 2, Poll. 3, Crest. 4, Withers. 5, Back. 6, Loins. 7, Hips. 8, Croup. 9, Dock. 10, Quarter. 11, Thigh or Gaskin. 12, Ham-string. 13, point of Hock or Ham. 14, Cannon. 15, Fetlock. 16, Large Pastern. 17, Small Pastern. 18, Hoof. 19, Hock, inner side. 20, Stifles. 21, Sheath. 22, Flank. 23, Coronet. 24, Heel. 25, Hoof. 26, Small Pastern. 27, Large Pastern. 28, Cannon. 29, Knee. 30, Arm. 31, Breast. 32, point of the Shoulder. 33, Wind-pipe. 34, Gullet. 35, Jowl. 36, Muzzle. 37, Face.

symmetry. The head, as a general rule, should not be large; but this is far less important than the proportion of its parts to each other. No part indicates higher breeding than the crest, which should be broad and angular in the blood horse, and gradually tapering to the muzzle (36); the eye should be large and full; the jowl (35), or jaw bones, wide; the ears small, thin, and fine. The head consists of six bones:—1. The crest, or ridge of the parietal bone. 37. The nasal bone. 36. The inferior, or maxillary bone, containing the nippers, or

under incisor teeth, and forming the muzzle. 35. The inferior maxillary, or under jaw; in the centre, between 35 and 37, is the superior maxillary, or upper jaw. The orbits, or cavities for the eyes, are formed by the union of four bones of the cranium and three of the face, so connected together as to obtain the widest sphere of vision with absolute protection to the organ. Following the figures of our engraving, 3 is the continuation of the crest; 4 the withers, forming the neck, composed of seven cervical vertebra, and containing a portion of the spinal cord. At this point a junction is formed between the scapula, or shoulder-blade, with the bones of the back (5), which consist of eighteen dorsal vertebræ, the bones of the loins (6) consisting of six lumbar vertebræ, the bones of the haunch, or croup (7 and 8), consisting of five sacral vertebræ, and of the tail, or dock, generally consisting of about fifteen caudal vertebræ; through all these vertebræ runs the cavity containing the spinal marrow.

Connected with these vertebræ, and forming a most important part in the animal structure, is the trunk, or chest. Of this, the upper part is the spine; the lower part the breast, or shoulder. The bones of the back are eighteen in number, the first ten or eleven corresponding with (4) the withers, the others forming the back and loins. The ribs are usually eighteen on each side, seven united to the breast bone, or sternum, by cartilage, and called true ribs, the others, united to each other by cartilages, and called the false ribs. Where the latter are short, it is objected to by some as a malformation, and it certainly indicates weakness; but it is necessary to distinguish between shortness of the ribs, and mere spareness of body. When it actually exists it unfits the horse for heavy work or endurance, and indicates a want of capacity for feeding; but it sometimes accompanies speed.

Lowness of shoulder is sometimes mistaken for lowness of wither; and hollowness of back is objected to as indicative of weakness. The low-shouldered horse is not adapted for the saddle; but a good shoulder may exist with an appearance of lowness of the wither; and where the horse is approved of in other respects, he need not be rejected on that account without proper examination. Nor is the hollow back in a horse always accompanied with spinal weakness.

Next in importance in the anatomy of the horse, is the shoulder and extremities. Following our figures we come to 10, the haunch, or quarters. This is composed of three bones, from which branches run up to the dorsal vertebræ at 9, where they are firmly united to the bones of the spine. The hip-bone is behind and below them, and

its points are seen under the tail, where they are united to the thigh bones (11). The femur, or proper leg bone (12); from the inner part of the thigh opposite (11), proceeds the principal exterior muscle of the hind leg. The hock (13 and 19) is a most important point. This wonderful complication of bones and muscle is admirably adapted for its purpose; but, from its structure, it is often the principal seat of lameness in the hind legs. It is subject to *sprain* from violent concussion, and many other ills, for the cure of which the aid of a veterinary surgeon is necessary. The cannon (14), one of three bones forming the leg between the hock and the fetlock (15). The larger and smaller pastern (16 and 17), are, perhaps, the most important and most complicated arrangement of the animal.

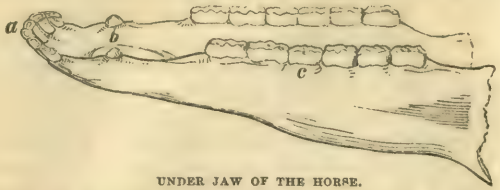
The cannon, the large and small pastern, and the coffin or bone of the foot, rest upon each other in sockets; they are supported by three bones behind their junctions, and are retained in their places by various ligaments, admirably contrived for the purpose of preventing concussion. These are the *sesamoid* bones, attached one on each side of the top of the larger pastern, forming a continuation of the socket, in which the lower portion of the cannon bone turns; and the navicular or shuttle bone, a small square bone attached to the coffin bone, and forming with that the socket in which the pastern turns; the suspension ligament, originating in the head of the cannon, is attached to the splint bones, and descends the leg between them; approaching the upper pastern, it separates, and the branches are inserted into each of the sesamoid bones, which they suspend in their places; a continuation of them is carried from these sesamoid bones to the navicular or shuttle bone, obliquely formed over the pastern, and meeting with the exterior or principal tendon of the fore part of the foot, at the back part of which, inside the frog, is the seat of navicular lameness. The common injury of the suspension ligament is sprain; rupture of it is a desperate case, demanding the prompt attention of the veterinary surgeon. This mechanism of the pasterns applies to both fore and hind extremities. The foot of the horse is composed of a horny external wall,—ascending obliquely backwards from the ground, to the height of about four inches from the toe to the bar in front, gradually decreasing in height till it is about an inch and a half at the heel,—the coronet (22 and 25) the coronary ring and band, the bars, horny laminæ, the sole, and the horny frog. The thickness of the crust in front is about half an inch, becoming gradually thinner towards the heel; in some horses the crust is much less, hence the necessity of care in shoeing.

The stifle joint (20) performs an important part in the animal economy; it is situated immediately under the femur, or thigh-bone of the hind leg, and answers to the knee-pan.

The knee (29) answering to the wrist, is a most complicated joint. Six distinct bones are placed here, each covered, both above and below, by thick cartilage, connected together with ligaments, but separated by interposing fluids and membranes; these six bones are arranged in two rows, with a seventh bone, the *trapezium*, so called from its quadrangular figure, placed behind them, which receives the lower end of the bone of the arm on the upper part, and the upper heads of the three bones of the leg on the under side—owing to which arrangement concussion is spread over the whole of the leg, and thus rendered harmless. The knee should be broad and square so as to allow space for the ligaments and muscles, for in proportion to breadth there will be strength. The sternum or fore part of the chest (31), and the arm (30), are formed by the scapula. The humerus, or upper bone of the arm, forms with the scapula an oblique angle, the latter being considerably the longest. The humerus rests on the lower bone or radius, to which it is united close to the ulna or elbow, corresponding with the stifle joint of the anterior extremities. The advantage of the slanting angle of the scapula and arm is considerable, and worthy of the attention of the horseman; it materially breaks the shock which would arise from any weight being thrown on the fore leg; it also assists the stride. Mr. Percival describes the shoulder-blade as "the segment of a globe playing like a spiral hinge within the cup-like concavity, occupying the apex of the scapula, there being no two bones in the skeleton whose articular connection admits of more varied and extensive motion than exists between the scapula and humerus." If we attempt to lift a horse's fore-leg we can not only bring it forward and carry it backward, but we can to a considerable extent make it perform a rotatory motion. In a well-formed horse the bone of the arm (30) cannot be too short, the effect being to throw the fore-legs well forward.

We now come to consider the mouth of the horse, which, taken in connection with his appearance, and with a proper consideration of his past history, forms the only certain test of his age. The mouth of the horse at five years old contains forty teeth, namely, six nipping or cutting teeth in front, a tooth on each side *b b*, and six molars or grinding teeth above and below, *c c*; these teeth are fitted accurately and firmly in the gum, a singularly compact hard substance, so callous as to be almost devoid of feeling. For months before birth these teeth exist in an embryo state; when dropped, or a few days afterwards, the first

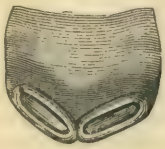
and second grinders of both protrude through the gums, showing large in proportion to the jaw. Eight or ten days after birth the mouth of



UNDER JAW OF THE HORSE.

the young foal exhibits two central nippers, as in fig. 1, efficiently filling the entire front of the mouth. At a month old a third grinder appears, and before six weeks a second pair of nippers have appeared; the jaw now presents the appearance represented at fig. 2. At two months old the central nippers have attained their full growth, and at three months the second pair will be on a level with them. The outer edge, heretofore raised and sharp, will now be ground down and level with the inner one; in this state the mouth continues till the foal is eight or nine months old, when a third nipper presents itself, above and below, on each side of the two first pairs, thus completing the colt's mouth, as represented in fig. 3. From this time till between two and three years old the only observable difference is the wearing down of the outer edge to the level of the inner, while the blackened mark in the hollow of the teeth, originally long and narrow, is still strongly marked, but the mark on the central one is becoming rounder and fainter; at this age the mouth now appears as represented in fig. 4; the four teeth are almost level, the mark on the last cut nippers being most distinctly visible.

1



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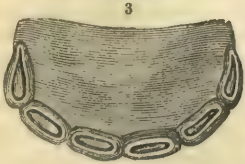

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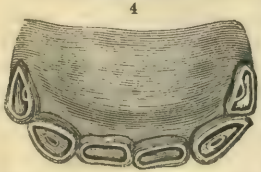
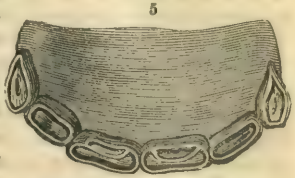


The grinders, or molars, so called from their lateral grinding action, are the back teeth *c c*, and the first pair appear about the time of birth. Before the expiration of a month, these are succeeded by a third, placed more backward. At the end of the first year, a fourth grinder usually presents itself, so that the yearling colt is furnished with six nippers and four grinders above and below; making allowance for the nature of its food, and with due attention to the appearance of the mark in the nippers, the age of the foal may be reckoned from the mouth described,—that is, up to May of the year after birth, if it is an year old. At eighteen months, all the nippers will appear flat, the marks on the front ones rounder and fainter; and at two years old this change will be still more apparent. About this period also a fifth grinder presents itself;—and now commences another process: the front teeth, or nippers, hitherto called milk teeth, gradually disappear by process of absorption, and the second or permanent teeth appear; this process is generally complete in the third year, but the permanent teeth have not yet attained the same level with the side teeth. At this age the central nippers are rather lower than the others, and still growing; the other two pairs wasting, with six grinders in each jaw, are the infallible signs of a three-year-old. From that age to four years old, the next pair of nippers disappear, and their permanent successors will be up—still small, and with a deep mark on the hollow, the sixth grinder will be on a level with the others, the two first grinders shed, and the tusks begin to appear. At this period the mouth is as represented in fig. 5. The tushes are two on each jaw, placed between the nippers and the grinders. At this age they are visible in the horse or gelding. At a later period in life, the mare sometimes exhibits them; but they invariably occur in the horse.

5



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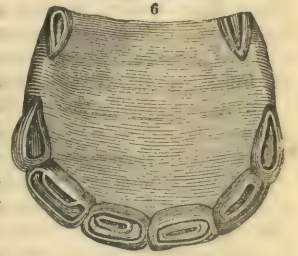

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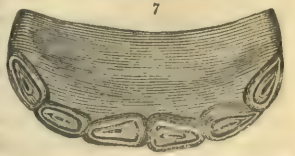


Between the age of four and five, the last pair of nippers disappear, and are replaced by permanent ones; the tush in the horse is now

fully developed, and is about half an inch in height. The colt becomes a horse, and the filly a mare, and the mouth is usually in its most perfect state as represented in fig. 6;—the last pair of nippers are full, the mark is long, deep, and irregular, and the other nippers show signs of wear. At this stage the horse has experienced his last change of mouth; he now sheds his tusks, or his last three pairs of grinders.

At six years old the mark on the central nippers is gone, but a slight black mark still remains; in the second pair, the mark is rounder and fainter, and the corner pair also show signs of wearing. The tusks are quite an inch in length, and tending to a point, the third grinder barely up, and all the rest of them on a level. Fig. 7 represents the mouth at this age, or from five and a half to six years of age.

At seven years old the mark on the four central nippers is gone, and is rapidly disappearing in the last pair; the tushes are becoming rounded. This rounding is completed at eight. While the marks have finally disappeared on the bottom nippers, they still remain on the upper jaw, and form a test of age for some years after they have disappeared from the lower one, but only great experience and judgment can detect the age after the animal is seven years old.

Numerous expedients are said to be had recourse to by unprincipled breeders and dealers to disguise the age of their horses—at an early age, to give them an appearance of greater age; at a later stage, to render them apparently younger. At two years old the colt is unsaleable; by feeding and nursing, punching out or drawing the central nippers, the animal may be made to resemble a late three year old. At four year old it is still more important to give the appearance of a five year old horse, and the ignorant in horse flesh may be deceived by the second pair of nippers being forced, by cutting into the gum so as to expedite the growth of the tushes; but the initiated will at once detect the deception by the wear of the other nippers, by the legs, thickness of the mouth, and general appearance of the animal, especially of the eyes, which in old horses become dim and somewhat wrinkled.

The teeth of the horse are covered with a polished and hard enamel, which long resists the action of the mouth in nipping and grinding its food. The grinders of the lower jaw are both smaller and narrower than those of the upper; they have also the higher points of the cutting edge within shelving outwards, while the upper have the higher side out-shelving inwards,—this, with the lateral action of the jaw, produces the grinding action necessary for macerating the food.

CHAPTER I.

Section II.—Breaking or Training.

The breaking of horses is a process which requires a vast deal more care than it usually receives. The person professing to take up this calling is often the most unfit of all persons for the task. A cast-off groom—a servant whom nobody will employ—usually selects this employment in the absence of any other, and a valuable horse is committed to his charge. Indeed, the word horse-*breaker* and *rough-rider* are terms which show the savage character which too frequently attaches to an operation requiring the most gentle and delicate treatment. He ought more properly to be called a horse-educator.

The office requires, with much activity and firmness, the greatest possible coolness, good temper, and patience. The breaker must first gain the *confidence* of the animal; unless he does this, his work is one of brute force, and opposed to all the instincts of an intelligent animal. To accomplish the operation properly is a work of time. The person who feeds the mother when the foal is at her foot is the best fitted to act as horse-breaker. If he is of a kindly disposition, and attached to animals, the mother will, by example, teach the foal to have confidence in him. He will thus find that the foal neither startles at his presence, nor resists his approaches nor handling, which should commence with the very infancy of the foal. In the ordinary mode of breaking, the first operation is too often, after haltering and bitting, to tie the animal to a post, in the top of which is inserted a swivel, and there to leave him to walk round and round, while the breaker is perhaps smoking and drinking; while at other times, to save himself trouble, he will make the horse trot or walk in a circle, while he gently plies the whip round him. This is both an indolent and an objectionable method. It teaches the horse to contract a long step and a short one. The off foot will, if this is much practised, be found to step out further than the near one, and the horse will have the habit and appearance of lameness. Another error is to mount the horse in a crowd. To be mounted at all is so novel a thing to a horse, that he is sure to be a little frightened; but if men and boys, with noise and whips, are hallooing about, the horse is terrified, and a bad habit taught perhaps in his very first lesson in riding. It is said of the celebrated trainer, Tom Middlemiss, that nobody ever saw him mount a horse for the first time; indeed, if well and prudently trained previously, there will be no necessity for

any such fuss. The back will soon become familiarized with weights, so that the well known friend, the educator, will be suffered to mount almost as a matter of course. If the horse is frightened at first, it is very likely that he will always refuse to stand when mounted.

Another serious fault is forcing a horse to walk faster than his natural action. In the breaker's anxiety to make a fast walking horse, he makes him only go in a jog-trot hobble, neither a walk nor a trot, the most objectionable pace, perhaps, of which a horse can be guilty.

A horse is sometimes injured by checking him too severely upon his tender mouth, when reducing him, say from a canter to a trot. So different are the actions, that a horse, inexperienced in paces, may easily be thrown on his haunches, and much injured by such treatment. This may be obviated by a very careful and gradual tightening of the rein, thus giving him notice that a change is desired. The horse will thus have the full command of his limbs in the change of the pace.

The desirableness of early breaking has already been spoken of. No greater mistake can be committed than to postpone this. It should, in fact, be commenced at the period of weaning, or as soon as the effects of castration have passed away; it should be commenced and prosecuted *gradually*, with gentleness and kindness, but with firmness. Let the young animal be daily handled, caressed and led about, and let him occasionally be rubbed down, and even at times tied up for an hour or so. The man who *feeds*, should have the entire management of him at this time, and he should be characterized by equanimity of temper and a kindly disposition. Half the battle in horse-training consists in this early management: many a horse is spoiled by improper treatment; and many, on the contrary, have been moulded into gentle, affectionate, and useful servants, by the judicious treatment of those who first inducted them into the knowledge of their duty.

For the first year, such treatment as has been described will suffice; after the second winter the operation of training may commence in good earnest. The horse must now be *bitted*, but the bit first used must be small, and of such form as will not hurt his mouth. The work of *bitting* may occupy three or four days, and, like everything else, should be done gradually; he should be taught to play with the iron first for an hour or two, and then for a longer period. When the colt becomes accustomed to the bit, he may then have two long ropes attached to it, slightly fastened to his sides by a loose girth over the

back, and his feeder may thus *drive* him, as it were, round a field, pulling upon him as he proceeds. This will act as a first lesson in *draught*. If intended as a saddle horse, a pair of sand bags may be thrown across his back, and secured there, and after a while, when he has become used to this, two pieces of wood secured in the position of a St. Andrew's cross, with a rein from the mouth attached to each, may be fastened upon his back, the inferior extremities grasping his sides, thus inuring him to the *legs* of a rider.

Portions of harness may now, from time to time, be added,—the *winkers* being kept for the last. He may now be put in a *team*, and it is better he should be one of *three*, having one before him and the shaft horse behind him. It is best to begin draught on grass, where the colt will not be frightened with the noise of the wheels. He has enough to occupy his thoughts without that, and the grand secret consists in not hurrying or confusing him. Let everything proceed gradually and by successive stages; and, above all, let no *whip* or *harsh language* be used, or the horse may be irretrievably ruined.

Breeders of horses are very apt to postpone the breaking of them to a period comparatively advanced, and then fancying that the training can be perfected at once. We have endeavoured to show that the work of training should be a gradual and progressive one, and that it should rather consist of a consecutive system of judicious management than a separate operation, suddenly undertaken and summarily performed. If the colt has been treated as has been recommended, much subsequent trouble will be saved to his owner; and if it were generally so treated, there would be fewer instances of vice and sulkiness displayed by the adult horse.

All horses, especially such as are required for agricultural purposes, should be broken into the saddle as well as to harness. This is easily effected when once the animal has suffered himself to be yoked in the *team*, as already described. Let his accustomed feeder and handler be the first to mount him; there is no doubt that the colt will suffer him to do so without struggling; and *gentleness alone* is required to complete the lesson thus auspiciously begun. At the same time that mildness is absolutely necessary, it is not the less essential that the colt be taught *implicit obedience* to the will of its master. For this purpose, however, neither the whip nor spur need be employed, nor need he be shouted or hallooed at; nothing is required but *firmness*, *steadiness*, and *patience*—the three great requisites in a successful horse-breaker. If he fails once in his lesson, try him again and again, until he has accomplished the object.

When the colt has acquired the art of *drawing* and *carrying*, it will be time to instruct him in, perhaps, the most difficult part of his duty—*backing*. This must be done *cautiously* at first, by the *long rope*, as already described, and gradually. Let first a light cart, and then a loaded one be added; let care be taken *not to hurt the mouth* with the bit. Patience and gentleness will effect everything; a contrary course of treatment will generate vice. Few horses are naturally vicious. It is cruel usage which has first provoked resistance.

A similar system—quiet but determined treatment—is to be observed in breaking horses for hunting or racing, and at about three years old the regular course of training a hunter begins. The colt is first accustomed to be led, and to endure the rein; he is then *rung*, or "lounged," as it is called, upon soft ground, which should never be performed except to teach the horse the action of cantering, which is, *at first* perhaps, best taught in a circle. After several days' practice in the circle both from right to left and from left to right, he may have the pieces of crossed wood placed on his back as we have before described. He is next mounted, and gradually taught his several paces, from the walk to the trot, canter, and gallop. Each portion of the colt's duty should constitute a separate lesson, and be taught him perfectly and thoroughly before proceeding to the next. The earlier lessons should be short: but as the animal's education advances, they may be increased in length, always, however, taking care not to push them to such a pitch as to produce absolute fatigue or disgust.

When accustomed to his paces, the colt may gradually be brought into the thoroughfare, and at length into the street. In this, of course, much caution must be used; and if the young patient display symptoms of shying at any object, he must be cautiously brought to approach it, and made sensible of its innocuous nature. All these exercises he should be taught on every possibly variety of ground—both flat, hilly, field, meadow, and ploughed field. It would far exceed our limits were we to enter into a lengthened dissertation upon horse-breaking generally; we have, we conceive, now done enough in explaining the principle. Any man possessed of common understanding, united with a moderate share of tact, courage, and skill in riding, can effect the rest.

Having now supposed your horses reared, broken, and in actual service in their respective occupations, it will naturally be expected that some advice should be given relative to their feeding and general management, as distinct from draught horses, to which a chapter is devoted elsewhere.

CHAPTER I.

Section III.—Feeding and General Management.

Half the disorders to which horses are subject may be traced to one of two causes—1st, too close confinement in ill-ventilated stables; 2nd, want of sufficient shelter; and exposure to all weathers, and at all seasons, in the open fields. There is a third serious fault frequently committed in horse management—it is over-feeding with *hay*. This applies more particularly to young horses, and to such as are not put to severe work. They are placed behind a full rack, and they eat for amusement, until at length the stomach gradually becomes preternaturally distended; the appetite gradually increases in a relative proportion, becomes sooner or later voracious, and finally merges into a mere *craving*—it being a matter of indifference what the food is, so that the stomach is filled by it. This depravity of appetite is always accompanied more or less by thirst. I have known instances of a horse so affected drinking *stale urine* at the dung tank; and I have read of instances where *hog's wash*, and even on one occasion *whitewash* was drank, to the serious injury of the horse's mouth and stomach. This devouring of trash produces general debility of the entire digestive functions, including stomach, bowels, liver, spleen, and pancreas; worms are produced in thousands, and symptoms present themselves of so many varied hues, that enumeration, far less classification, becomes impossible.

A horse's appetite is not to be taken as the criterion by which to determine the quantity of hay he is to be permitted to consume, for most horses will eat three or four times as much as they require. Horses have been known to consume thirty pounds weight of hay in the twenty-four hours, whereas ten to fourteen pounds is the most that should have been given during that time. Upon eight pounds of hay daily, with a due allowance of oats, a horse can be kept in full work, in prime health and spirits. It is better to keep young horses at grass until about five years old, and to work them at light work during the last two years of that period. When kept in the stable and not worked, they are apt to acquire many very bad habits; and if the rack and manger be kept empty, with a view to prevent their overloading their stomachs, they will fall into a habit of playing with and mouthing them—a habit which will finally degenerate into wind-sucking or crib-biting.

The great desideratum in a stable is *ventilation*. A horse requires

air equally with his master; and our Chapter on Stable Management gives the best information we possess on that subject. The necessity of cleanliness, however, cannot be too often impressed on all having charge of horses.

A few buckets of water dashed over the floor of the stable while the horses are at work, or, if hunters, at exercise, will keep all sweet. The litter should also be turned out to dry, and a little fresh straw spread for the horses to stale on. A shed placed beside the stable is a great advantage, on two accounts—it admits of the litter being dried, and the horse dressed there in wet or stormy weather, where a cleaning house, which is perhaps better, is not attached to the stables.

A little powdered gypsum, strewn upon the stable floor, will also act by absorbing the ammoniacal gas, and thus removing both the foul smell and the gas—frequently a predisposing cause of ophthalmia. Should the ammonia, however, have accumulated in any quantity, the speediest and most efficacious remedy, as a disinfectant, is the laying down a plate or dish containing muriatic acid: or, as is practised in some stables, a layer of peat charcoal strewed under the litter will effect the same object.

Having spoken elsewhere on the subject of stable management, and its natural concomitants, dressing and grooming, it is necessary to devote a few words to the consideration of *horses at grass*. House-soiling is supposed to possess considerable advantages over grazing, for not only will the animal be preserved in *harder condition*, but his *dung* alone will go a considerable way towards paying for his keep. Still there are certain months of the year when the putting the horse to grass will be productive of decided improvement in his health, will invigorate his constitution, renovate his health, and serve, in all respects, in place of medicine. The time for turning the horse to grass is from the middle of May to the end of August. Horses in constant work, however, should not be suffered to be out at night after the end of July. When first turned out, horses are apt to make too free with clover and other such rank and luscious feeding; they should not, therefore, be turned into the richest pasture at first. Clover, vetches, sainfoin, lucerne, are all very excellent descriptions of feeding, whether the horse be suffered to graze on them from the field, or be given cut in his rack in the stable. To these may be added Italian rye-grass, the value of which is beginning to be appreciated of late years more than ever.

Nimrod altogether disapproves of turning out to grass, and after his advice some of the best studs in the kingdom are conducted.

In treating on this subject in his work on the condition of hunters, his first sentence is full of truth:—"Had some sensible and rational groom given to the world the result of his practice in the stable, I should not have taken up my humble pen on this subject. He would have been better qualified for the task. But I have never given my grooms control over my horses, even in the stable, acting on the principle that two heads may be better than one, and that the person who rides the horse is the better judge of his state, than the person who cleans him." The following may be called "Nimrod's maxims":—

1. The situation of a hunter well ridden up to hounds is one of great peril and danger; on the horse being in condition depends, not only the place the rider is to maintain in the field, but his safety in that place.

2. A horse is said to be in "condition" when he is full of flesh, has a shining coat, and a healthy look. He may have all these, and yet he may be incapable of exerting his powers with effect. It is more by feel than by look that his condition is tested.

3. Never give a hunter a "summer's run at grass," and, except "under very favourable circumstances, never turn him out at all."

To this maxim we have already taken certain exceptions; but the author's experience is too great, and his views on this point too decidedly mixed up with his other maxims, to be omitted.

4. The pace of a hunter is now the pace of a race-horse, and the preparation should be the same, or he has not justice done him. It takes twelve months to bring a racer to the starting-post.

5. All measures which tend to throw nature out of her destined course by violence are bad. How, then, can we reasonably expect that a horse, turned out to grass for the summer, and taken up in August, should be in a condition to go to hounds by the end of October, when we are assured that the race-horse requires twelve months' preparation. In turning out, if horses get soft and fleshy, great risk is run of injuring their legs, by the exercise necessary to get rid of the load of flesh they have accumulated, and recover condition.

6. In the act of grazing, great pressure is laid upon the sinews of the fore-legs of most hunters; this is especially the case with horses which have been reared on corn. Turning out, therefore, is by no means a season of rest to the animal, but the reverse.

7. To sum up, according to Nimrod;—turning out is destructive to condition, and it requires great length of time to recover it,

besides the annoyance to the horses from flies, with its attendant evils.

When we come to look impartially at the two systems which we have endeavoured to explain, it will probably be found that truth lies between; for, after bringing forward many arguments,—among others, the condition of post-horses, always ready for work, and sleek and smooth in their coats, even after a second nine mile "out and home,"—in addition to numberless instances of hunting-studs where the "turning-out" system is adopted, and condition rarely if ever recovered till the hunting season is half over, contrasting them with others where the in-door system is pursued, and the horses always ready, Nimrod goes on to say—"Lest it should be supposed that I am averse to turning out hunters at all, it will be better to explain. So far from being averse to it, I strongly recommend it, under favourable circumstances. In cases of blistering, and after firing, it is almost necessary; but then they should only be turned out at night, and in places where there is little grass; and they should have two, if not three, feeds of oats a day, with a few vetches when they are young and tender. The smaller the paddocks are the better, as it is not food that is required from them, but exercise." It will thus be seen that a moderate adaptation of the views we have advanced are not irreconcilable with those entertained by Nimrod. We would adopt as a preventive what he recommends as a cure.

If the weather be wet or cold, let the horses be taken in during the night, and let the field be provided with trees, a shed, or other similar shelter from the rain or sun. If you make them work as usual, give a feed of equal parts of oats and chaff each morning, two hours before putting on the collar, and the same on return from work before putting them out. This is necessary to working horses, as a counterpoise to the *green food* which forms the staple of their diet. Much absurdity has been written as to the necessity of bleeding, purging, and what not, consequent upon every change of food; the only precaution necessary to be observed is, to effect the change gradually, and to *work* or exercise the horses while it is going on. Idleness is the cause of more ailments than ever arise from change of diet, among the finer descriptions of horses, at these seasons. As winter approaches, the horses are to be taken up from grass, both because at that season the herbage becomes watery and innutritious, as well as scarce, and because the weather is usually too cold for constant exposure. There can, however, be no precise rule of month or

day laid down to direct you; you must be able to judge of your horses' condition and capabilities, and of the state of the weather peculiar to the season. The first step, however, will be the housing at night, and turning out in the daytime.

As to the general feeding of horses—let them be always *fed according to their work*. The materials, besides those enumerated, are various: split peas, split beans, oats, barley, chaff, chopped straw, potatoes, turnips, carrots, bran, &c. It is, in Ireland, too much the custom to feed working horses exclusively upon *oats*, with, of course, *hay* as usual, and too often *ad libitum* with the later. In England, the matter is better understood, and beans, peas, and various sorts of roots, are advantageously substituted for the oats.

We have already shown what a waste of hay takes place in stable-fed horses, and how it may be avoided. This avoidance of waste is of itself a piece of important economy. You will hear people often talk of *hard* and of *soft* food; and you will, on the other hand, hear others cry down these expressions as absurd. *Literally*, the expressions involve error; but the meaning intended to be conveyed is strictly true. It is true that every description of food, whatever have been its consistence prior to its reception into the mouth, will, upon elimination, become converted into the same homogeneous, pultaceous mass. It is, however, not the less true that some substances are richer in *chyle*-producing powers than others, while others possess a greater amount of watery or diluent matter. The former is hard, the latter soft feeding. A due proportion of these two descriptions of feeding must be maintained, if we wish to preserve the horse in health and condition. It is, however, unnecessary that these two descriptions of diet should be presented to the stomach in their crude state; it is, on the contrary, more advantageous to prepare them previously, and present them to the digestive organs in a partially changed state, in which they are more ready to be assimilated. This saves the digestive organs much unnecessary labour, and the work of chymification goes on with much greater rapidity.

This mode of feeding horses was tried some years ago, by Mr. Croall, an extensive coach proprietor in Scotland. It was, we believe, at the suggestion of Captain Cheyne, who had at the time become connected with the coach business, that it was tried. The post-boys at first loudly protested against the innovation, declaring that the horses could never work as before on the new diet, decrying it as *soft diet*, and insisting that without *hard feeding* it would cause *purging*. Fifteen pounds of the following mixture were given to each horse:—

10 bushels of cut straw		90 lbs.
6 „	bruised oats	174 „
1 „	bruised beans	59 „
		323 lbs.

Or separately to each horse—

Oats	8 lbs.
Beans	2¾ „
Straw	4¼ „
	15 lbs.

And at night the following mixture, 25lbs. to each horse—

1 boll of potatoes, at 7s. 6d., 5 cwt., steamed	560 lbs.
Fine barley dust, at 10d. per stone	36 „
Cut straw, at 6d. per stone	40 „
Salt, at 3s. per cwt.	6 „

From this it appeared that the daily cost of each horse per day was 5d. for supper, and about 1s. for forage and cookery—about 1s. 6d.—wages of feeder and cook, and expense of fuel included. It was also found that the horses were able to stand to their work on this system of feeding far better than they had been able to do on the old. It therefore became apparent, that not only was economy of feeding attained under the new mode of management—the cost of each horse being somewhat under 9s. per week—but that the animals were actually in better condition, able to go through a better day's work, and, consequently, to *pay better* for the expense of their keep. The above result reminds me of a similar experiment, tried with reference to *pigs*, recorded in detail in my work on those animals, and which proved equally successful.

While the common farm-horse often passes years upon grass or hay alone, and, if not hard worked, supports himself in tolerable condition, harder food is required for the carriage horse and hunter. For these a more nutritious, more *condensed* substance is required. Throughout the greater portion of the British islands, this desideratum has been chiefly furnished by the use of OATS. Oats are of a highly nutritious quality. In 1000 parts, they contain 750 of nourishing matter. In most parts of the continent of Europe, BARLEY is the staple food of the horse in lieu of oats. It is more nutritious than oats, containing only 80 parts of non-nutritious matter in every 1000. Barley, however, does not appear to agree with all constitutions, being of a heating or inflammatory tendency; *surfeit* and *mange* being frequently consequent upon its continued use.

WHEAT contains still more nutritious matter in a given bulk than

barley, but is not so good for horses. It contains more *gluten* than any other sort of grain, is more difficult of digestion, and apt to form congestion in the intestines; it also adheres to the teeth in a disagreeable manner. This has, however, only been proved in instances where spoiled or damaged wheat has been given.

Bran, the ground husks of wheat, acts upon the bowels, when given occasionally, as a gentle aperient; it must not, however, be made a frequent food, far less a constant one. Both bran and pollard have been found to accumulate in the large intestines. When bran is given, let it be in the form of a mash.

Beans contain somewhat less than 600 parts of nutritive matter in the 1000, but they are a most valuable food, eminently calculated for horses on hard work. There is a fact in connection with food, whether as relating to man or to the brute creation, that is scarcely even yet sufficiently understood, viz., that the food containing and showing, by analysis, the greatest amount of nutritive ingredients, is not of necessity the most nutritious. Beans present a remarkable instance of this fact, and one worthy of attention.

Peas possess in a slight degree more nutritive matter than beans, and are said to be less heating. They should, however, never be given *whole*, but be always previously *crushed*. If swallowed whole, they are sure to swell considerably in the stomach, and painfully to distend it. Peasmeal is considered good food for the horse, and a remedy in certain diseases of the urinary organs.

A mode described by Mr. Brown, of Elgin, who details the plan on which he fed from twelve to twenty horses for upwards of twenty-five years, may prove both interesting and practically useful:—"In the first place, the *straw* of wheat, barley, oats, and peas, is the only fodder I have given my horses for the above period, and their *feed* or *bait* has been all *prepared*. I have, close to the stables, an apartment in which is placed a boiler of about 300 gallons contents, and a steamer capable of steaming 20 bushels of potatoes. In the boiler I prepare a mixture of chaff, yellow turnips, and about a bushel of *lights*, or dressings of barley, oats, or peas. The light grain and chaff are mixed, after being carefully sifted, and put into the boiler layer about with turnips, which, if large, are cut into three or four pieces, along with about fifty gallons of water, making the boiler *bumper full*. When the steam begins to appear at the top of the boiler, a small quantity of salt is strewed on the top of the mixture; and by the time the steam ascends freely from the boiling substance, it is time to damp the fire, as it is found that the heat from below sufficiently prepares

the upper layers, and that to continue the fire longer only wastes fuel, and overdoes the bottom of the mixture.

"When the heat has so far subsided as to allow a person to remove the mixture without inconvenience, it is thrown into a cooler placed close to the boiler, and is given to the horses at the rate of a common stable pail-full each, twice a-day, when they are working short time, and thrice a-day when they are working long time. In this way I feed my horses from the first of October till about the middle or latter end of April, by which time the spring corns are generally all thrashed out, and the lights or dressings accruing from them exhausted. From that time I substitute steamed potatoes for the mixture. These I carefully wash before putting them into the steamer, and to them I also add a little salt during the steaming process. They are also given twice and thrice a-day in the same quantities as the mixed food. The potatoes I steam every day, as, if kept overnight, they become glutinous and indigestible, and are dangerous to horses given in such quantities as I have mentioned; but, if fresh steamed, they may be given in any quantity. The steamer has a false bottom, through which the liquid or juice is drained off from the potatoes; when thus prepared, the potatoes are as dry, clean, and mealy, as those generally used at table. I find them excellent food for horses doing farm work; indeed, I would prefer them to any other food; but potatoes are a bad cleaning crop, and do not suit my rotation, hence I grow few of them, but just manage to have a sufficient supply to carry on my working stock from the middle of April to the first of July, when I have fullness of grass, either for pasturage or for soiling my horses till the first of October."

For the last few years the potato crop having been a total failure, it is not unnatural that fears should be entertained for the existence of the root. We would therefore reommend, as a substitute for them, *corn*, ground or bruised, to be combined with turnips, carrots, or parsnips, whichever indeed of those vegetables should happen to be most plentiful; indeed corn, in combination with roots boiled or raw, forms a valuable article of diet for graminivorous quadrupeds. Horses, cattle, swine, and poultry, will eat the mess with avidity of appetite calculated to excite surprise at first. The mess,—to which a little salt should invariably be added,—will keep them in fair average condition; for those which it is desirable to fatten, many have a small quantity of pea or bean meal added.

It is quite impossible, however, to give the same substitutes for hay and corn either to the hunter, the racer, or even to the roadster or

hack, which may be given with advantage to farm horses. The great staple of their food will always be hay and corn. That the quantity of both may be diminished by cutting the one and crushing the other, cannot be for one moment doubted; but as a certain quantity of food must always be given, a little fresh straw may be placed before the animals, who will always eat it with relish; it is amusement for them, and relieves the *ennui* arising from being immured in a stable.

Great attention is requisite in selection of the *hay*. That it is dried grass is generally enough for some grooms; whereas, there is the greatest difference between grass grown on one kind of land, and that grown on another. The herbage of the valleys, at the best, of the mountain limestone of England will, as a rule, only feed cattle. Though differing but very little in kind, there is a great difference in degree of the materials necessary for building up structure in the different kinds of hay. The composition of the hay of these valleys is thus given by Spence, whose analyses and investigations on the composition of soils and grasses is but too little known:—

Potash,	in 1000 parts,	9·902	Oxide of Manganese,	in 1000 parts	·210
Soda,	,,	6·354	Chlorine,	,,	·002
Lime,	,,	7·909	Sulphuric Acid,	,,	3·085
Magnesia,	,,	2·535	Phosphoric Acid,	,,	2·367
Alumnia,	,,	·500	Silicic Acid,	,,	15·737
Oxide of Iron,	,,	·012			

Contrast this with a sample of hay from the millstone grit substrata,—a poor soil,—as below:—

Potash and Soda,	in 1000 parts,	14·630	Sulphuric Acid,	in 1000 parts,	1·558
Lime,	,,	4·953	Oxides of Iron and Manganese,	,,	·035
Magnesia,	,,	1·769	Phosphoric Acid,	,,	3·451
Alumnia,	,,	·100	Silicic Acid,	,,	17·610
Chlorine,	,,	·010			

Now, in the last of these analyses, the inorganic elements of flesh, and bone, and sinew, form the largest constituents, and a soil rich in these elements of restoration will yield abundance to the plants that grow upon it, and hence hay, turnips, and even corn, grown upon such soils will, bulk for bulk, and weight for weight, be much more nourishing than that grown on poorer land.

Good hay should moreover be well won. It should not, if possible, be exposed to wet in this rainy climate. The rain at first washes out the best and most valuable parts of the hay, which soon produces an incipient state of decomposition. It must also be "got in" in a

dry state—that is, the juices must be dried up so far as to prevent the heating of the stack. If the natural saccharine juices are not to a very considerable extent dried up, the fermentation so necessary to the making of good hay, will run on to heating, and the stack becomes *mow burnt*. Hay in this condition must never be given to horses; it has a strong diuretic effect, and is very injurious to their health. On the other hand, the hay must not be "got in" too dry, otherwise it will not ferment at all. The great defect of French hay is, that it is all woody fibre, and has not undergone thorough saccharine fermentation

But great care must be taken, if the hay has been wet, to take away all the extraneous moisture by proper drying. Hay put into a stack when the natural juices are imperfectly dried, differs considerably from hay which has been wet from rain and not fully dried; the first excites over-fermentation, produces brewing, and becomes "mow-burnt;" the other will produce mouldiness, render the hay unhealthy, and induce diseases of the lungs, and broken wind; and husky breathing will follow.

The *oats* are also liable to the same faults. They may either be mow-burnt or mouldy, but, as the outer coat is a protection from the latter, they will do less injury than mouldy hay. Over-heated oats however, are absolute poison to the horse, and ought never to be given on any account whatever.

Another desirable quality of oats for high fed horses is that they should be recently thrashed. They keep by far the best and sweetest in the stack. If chambered, and not very carefully turned and ventilated, it is almost impossible to prevent them becoming musty and acquiring the peculiar odour of decay; nor must they be *new*. To give a horse oats grown in the same year, before Christmas is turned, will make him perspire. So much consolidation of the juices should take place as will render this very necessary aliment both digestible and sound.

As the hunter and race-horse must have as many oats as he can eat in seasons of hard work, care should be taken to have them of the best quality. Hence the Hopetoun and Potato Oat, which have a large amount of farina in a thin skin, are always the best. The colour should be a delicate white, and they should be free from all smells which would be disagreeable to the horse. Of the kinds of straw, and indeed, on the use of straw at all, for first class horses, great difference of opinion exists. When a horse has plenty of corn and hay, a little straw of any kind, if fine and sweet and fresh, will do good—will be a

variety—will prevent nausea—and will afford employment sufficient to prevent the ennui so productive of bad stable habits.

The writer always prefers *oat* straw; but many practical and scientific writers speak more favourably of wheat straw. Nimrod goes so far as to say, "I am not only convinced that to the fact of the horses in France eating as much straw as hay, is to be attributed their general healthy condition; but I was informed by Lord Henry Seymour, at Paris, that his race-horses, then, of course, doing good work, were eating nothing but wheaten straw and corn;" and this we are persuaded was far better than the usual Parisian hay. Barley straw is usually considered the worst; and when horses are made to feed on this they must have an ample allowance of roots, linseed, and some such aliment. Of roots, carrots have always had the preference, not so much, perhaps, because they are absolutely nutritious, but because they act slightly on the bowels and kidneys, and are much relished by the horses. Through the bowels they react on the skin, and there is no root with which the stud-master is acquainted so valuable for the coat as the carrot. The degree of substitution for corn will, of course, depend on the work. Allusion has been made to the use of carrots alone for farm-horses; but an Essex gentleman is mentioned who absolutely hunted his stud regularly twice a-week, which was fed on them. They had one bushel each per day, with hay, but no corn substitute. They would not probably have been able to follow the foxhounds with such food, and it is not improbable that the hay might have been grown on the banks of some alluvial meadow, and hence for nutritive purposes being nearly as good as some hay and corn.

Bruised furze is amongst the extraneous kinds of food used in some places for the keep of horses, and in Spain and in France it is common food for hard-ridden horses; nor had the British army, under the Duke of Wellington, in the Peninsular war, any other forage than this for their horses;—a remark applying to their abode in the Pyrenees in particular.

For mares, for young horses, and partially for roadsters, and horses in moderate work, they are useful, and some of the experiments made are interesting. Mr. Tytler, in a communication to the Highland Society of Scotland, estimated the daily cost of furze feed per horse, from November to February, at 5½d., and from February to March at about ninepence. His calculations, however, included straw, which he reckoned at as much as threepence per day, and he allowed nothing for the furze itself, as it was probably growing on land producing it in

a wild state. But he allowed about three pounds of oats per day in the last month, for which he made the calculation. On soils where the growth of hay or corn is unprofitable, the gorse will thrive; and in climates where no other edible productions can be reared, they will soon make head, and be an abundant crop.

An excellent addition to the food of the horse, where a great expenditure of muscle takes place, is the bean. For coach horses they are indispensable. Mr. Ward once said, according to Nimrod, as the hounds were settling to the fox, "Now, we shall see what horses eat old oats, and what horses eat new;" and, adds Nimrod, he might have applied the distinction to those that eat beans, and those that did not. for, says he, "They help to bring him home at the end of a long day, and support his strength in the run." The same remarks apply to beans as to oats in reference to their being old, new thrashed, and free from mould and moistness.

To sum up;—Stewart, one of the best writers on stable management, gives the following epitome of the principles of feeding, which we transfer, at least in its spirit, and with some slight modifications, to conclude these remarks on feeding.

When the horse has to work as much and as often as he is able, he should have an unlimited supply of food.

When the work is of a kind to injure the legs more than to exhaust the system, the food should not be excessive unless he happens to be an indifferent feeder. When the work is light, or moderate, a healthy horse will, if left to himself, eat too much.

When cold weather sets in, more food, and that of a more nourishing kind, will be required, than when the weather is warm.

A horse in good working order, and not too fat, requires less food than when in low condition, or even approaching towards it.

Young horses, when growing, require more food than when arrived at maturity.

Very old horses require not only more nourishing food, but it should be supplied in a more macerated and digestible form than to either young or matured animals.

Irritable nervous horses require more food to keep them up than others of a quieter or more lethargic disposition.

Small-bellied narrow-chested horses require more food than deep, round-carcassed horses.

Lame or diseased animals, or those with tendency to grease, or corns, or running thrush, or any cause of irritation to the system require more and better food.

CHAPTER II.

BREEDS OF HORSES.

It is not easy, it is not, perhaps, possible, to determine which breed of horse was the original stock. Nor will the oldest evidence—the fossil bones to which we have referred—assist us in the investigation, the internal characteristics being so much alike in the several varieties, and the sizes of different individuals of the same variety being so different. The bones found in England differ in some respects from any horse inhabiting the island at the present time, while the bones found in America seem to be those of a variety now extinct—certainly different from those of the wild race—the emancipated Spanish jennet!

Had the horse, then, several originals? Was he like or different to those now known? It is a curious subject of investigation whether the breeds of our domesticated animals originated from one pair or from several! Was there originally a domestic, as well as a wild species of the horse, created, as has been hinted at, in connection with others of our domesticated animals? Again, can the high-mettled racer, the Arabian and the Suffolk punch, the diminutive shelty and the stately Clydesdale, the London dray-horse and the light, clean-legged Cleveland coach-horse, have been all from one common stock? The question has baffled naturalists and philosophers, and is not quite clear to the theologian. Either the negative or the affirmative of the proposition is open to objections, philosophical as well as theological. Meanwhile, the fact remains unsettled, and will probably remain so. Climate converts hair into down, wool into fur. There is a plasticity in nature—a tendency in all animals to accommodate themselves to the circumstances in which they are placed—which, though slow sometimes, and sometimes painful, is, perhaps, the most wonderful, if investigated with patience, of all the characteristics of nature. What but this power of adaptation gives the curly, shaggy coat, best calculated to defend them from the wintry blast, to the animals which inhabit the northern Highland glens?

Then, again, mark the effects of herbage and food. Take two twin foals where the mother has only milk for one; give the one its natural food, the mother's milk, and feed the other one on cow's milk, and sugar, if you please. The one nursed by the mother will be a thriving animal, the other meagre and shrunk. This is the effect of aliment. In the one instance, the food was that appointed by nature; in the

other, it had none of the food calculated to develope its qualities, and it shows its wants, not by dying, but by assuming an altered and, perhaps, deteriorated form. Now, take these same twins—leave the one nursed and fed by the mother in the fertile valley of the Clyde, and drive the other to browse on some heath-covered Highland hill. The one draws its food from an alluvial soil, the deposited debris of many generations;—it luxuriates in the grass grown over what was once the bed of a wide-flowing river, filled up with the finest and most soluble particles of earth, washed out of the virgin soil, and mixed with the phosphated earth, the washings of the mountain lime-stone and granite. In this fertile valley our foal, now a colt, has food easily attainable; he rests and he sleeps. His food is abundant in ammonia and potash to form flesh, and in phosphate for forming bone; he lives richly and easily, has acquired large bones, powerful muscles, and broad and rigid sinews; he increases in size and bulk. United with others similarly fed and developed, he becomes in time the powerful and majestic Clydesdale horse.

The other has to pick up a scanty subsistence on barren moors; has to travel far for his necessary food, roaming all day from hill to hill; the grass he finds is poor and innutritious. On this fare, however, he becomes active and hardy, although his frame is small and stunted, for he only attained half his growth. Breeding with animals like himself, denizens of the same moor, they increase in hardiness, and a breed of horses, small-boned, muscular, diminutive, and shaggy, is established, just the converse of the lordly Clydesdale—the one the Lilliputians, the other the Brobdignagians of their race! Such is, in all probability, the origin of the numerous varieties of the horse, now spread over every part of the known world. The wild Tartar horse is probably the original of the breed, the type untamed—unchanged by civilization—of all the breeds now existing, spreading, perhaps, over a greater area than any other race of animals. To habit, soil, climate, and to the hereditary domestication of centuries, are we to trace the different varieties, all fitted by the plastic hand of nature for the purposes for which they are required, and all more or less adapted to minister to the wants of man.

We have seen that in Egypt the horse was in extensive use in the very earliest stages of the world;—we also find that in comparatively modern times—so recent as the days of Mahomet, when he attacked the Koreish—it is stated that not a single horse was to be found in the entire camp of the Prophet—showing how scarce even at so recent a period were horses in Arabia. There is, of course, no

question that Arabia subsequently became a great depot for the horse, or that the animal attained a great degree of perfection in that country; for, in point of fact, it is to the introduction of Arabian blood that the horses of the British Islands owe their present undisputed superiority over those of all other countries.

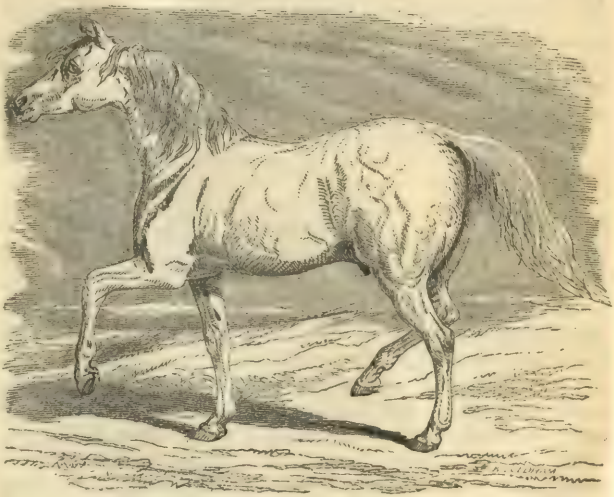
In pursuing this investigation, it is not our intention to devote much space to the natural history details of the Horse, partly because the practical part of the subject is sufficiently extensive to require all our space to do it justice, but more especially because that animal occupies a prominent part in all books on the natural history of animals. Confining our remarks, therefore, to a brief view of the principal stocks as at present known, which is the more necessary, as the different varieties present different modifications of form, of disposition, constitution, and adaptation, we shall commence by giving a short history of the Arabian Horse, from which all our best blood is descended, following up that sketch by a short account of all the foreign varieties of the Horse, before entering on the English breeds.

CHAPTER III.

ARABIAN AND OTHER FOREIGN BREEDS OF HORSES.

In Arabia some horses run wild, and are, even in that feral and uncultivated state, creatures of considerable beauty of form, and endowed with the greatest mildness and generosity of disposition. In size these animals are small, averaging between thirteen and fourteen hands high. Their colour is usually a dappled grey, but sometimes a dark brown, with short and black mane and tail. They are caught in snares carefully concealed in the sand, by which means the feet, becoming entangled, the terrified horse falls to the ground, and is easily captured. This is the only mode by which they can be taken, their swiftness rendering all idea of chasing them with dogs, or on horseback, utterly out of the question. These wild Arabs are now nearly extinct, the high price given for them having induced the natives to draw largely and constantly upon these resources of the desert. To the wandering Arab the Horse is of the greatest value. The poorest Bedouin has his domesticated steed, which shares with him and his wife and children the shelter of his humble tent, his caresses, and his scanty fare. Oft may the traveller in the desert behold, on entering within the folds of

a tent, the interesting spectacle of a magnificent animal, usually a mare, extended upon the ground, and some half dozen dark-skinned, naked urchins, scrambling across her body, or reclining in sleep, some upon her neck, some on her carcass, and others pillowed upon her heels; nor do the children ever experience injury from their gentle playmate; she recognizes them as the family of her friend, her patron; and towards them all the natural sweetness of her disposition leans, even to overflowing. The Arabs invariably keep *mares* in preference to *horses;* they find them endure fatigue, and the privations necessarily consequent upon a journey over the desert, better; a number of them can also be kept together without danger of their quarrelling or injuring each other:



THE ARABIAN HORSE.

on this account it is very difficult, indeed, to induce an Arab to sell his mare. The Arab is particularly careful of his horse's *coat;* he washes the legs, tail, and nostrils, regularly, morning and evening, and always after a long ride; the mane and tail are left in their natural state, and very seldom even combed, lest they might be thinned. The animals are fed only during the night, and from morning to evening they get nothing but one or two drinks of water. From sunrise to

sunset they are kept, ready saddled, standing at the door of the tent, or if allowed to stray saddled, they speedily come on the call of their master.

The Arabs carefully preserve the pedigree of their horses, and divide them into classes, or castes. The most noble of these can, say their traditions, be traced back to the steeds on which Mahomet and his companions rode on the night of the memorable "Hegira." The truth is, that the celebrated *Kochlaini* breed are so excellent and so valuable, that the Arabs have fanatically attributed its quality to their being the descendants of the prophet's horse. Some traditions even carry its origin back to the days of Solomon, from which time they are said to have descended without cross. The mare is, as we have stated, almost unpurchasable, there being, indeed, a law prohibiting her exportation; and the horse is only to be obtained at the most enormous prices—one thousand pounds not being an extraordinary sum, and instances being on record of mares having been purchased for double that amount. We give a brief description of the appearance of the pure Arabian, as found in a domesticated state, and this is the more necessary, as many spurious Arabs are frequently endeavoured to be palmed upon the unwary or inexperienced. In the preceding page is given a portrait of the celebrated Wellesley Arabian.

The thorough-bred Arab never exceeds fifteen hands, and rarely fourteen hands and a half in height. The *skin* is pure black, or blue-black, a circumstance which gives to a white horse of this breed that beautiful silvery grey colour, so indicative of the purest blood; brown, bay, and chestnut, are good colours, but it has long been remarked in India, that *no dark-grey horse* was ever a winner upon the turf.

The head of the pure Arab is light, clean made, wide between the nostrils, broad in the forehead, short and fine in the muzzle, and remarkably small in the lower jaw, nostrils expanded and transparent, eyes prominent and sparkling, ears small and neatly set on, neck rather short, and very wide near the throat, shoulder high and well thrown back, the shoulder-blade, indeed, inclining backwards nearly forty-five degrees; withers high and arched; legs fine, flat, and small-boned; body somewhat light, but showing substance wherever it is really wanting; the chest, for instance, has frequently been objected to as being too confined, but a less cursory examination will discover, that although apparently narrow, at a front view, it swells out behind the *arm* to a remarkable degree, thus affording ample room for the play of the lungs. The hind quarters are set on somewhat obliquely; but from the extreme density and hardness of the

bone, and lightness of form, which enables it to endure the additional strain thus induced, this formation, far from detracting from the animal's strength, has rather a contrary effect, and to this peculiarity of conformation is the extraordinary speed and powers of endurance possessed by the Arabian horse mainly attributable. These qualities have stamped it as the source of improvement in all our British breeds, so that no very swift horse can be named which does not, on one side or the other, trace its descent from pure Arab blood. As a racer, on a regular course, the Arab has seldom been afforded a fair opportunity of competing with our own blood-horses; such as have been thus tried having always been animals of an inferior stamp, and the natural consequence has been, their invariable defeat.

The Bedouin Arab—the wildest son of the desert—is possessed of the most perfect of the Arabian caste, or *Kochlaini* breed of horses; and the purity of these they keep with all the care of a crown jewel. The feats these can perform are so wonderful, as almost to exceed credibility. In the poetical language of the desert, "If you meet one of the faithful mounted on a *Kochlaini*, and he shall say, 'God bless you,' before you can reply, 'and God's blessing upon you,' he shall be out of your horizon, for the whirlwind travels after him in vain." Fifty miles on the arid sands of the desert per day, is not considered too long a journey without a bait, and even more than double that distance is sometimes accomplished. They are taught to drink as little as possible, used to endure long without food, and possess that power of endurance so far, as sometimes to be from twenty-four to thirty-six hours—and even a greater period—without tasting either of food or drink.

Though the Arabian horse is the companion of his master—partakes of his fortunes, his privations, his joys, and his sorrows, and is treated as one of his own children, the test of its powers of endurance are for once in its life of a very severe and almost cruel kind. She—for, as we have seen, female animals are the great favourites—is mounted for the first time, as a filly, and forced over fifty or sixty miles of desert at the very top of her speed. She is then plunged into water up to her middle, and if she endures this, and appears not to suffer, she has established her character. And this has, perhaps, more to do by far with the proof of her value, than pedigree or descent. It taxes her powers of endurance, it is true, to their extreme tension; but if she is feeble or inferior this will break her down—she is rejected from the superior caste, and only those are bred from her for keeping who can endure the ordeal. It is probably this treatment,

rather than any striking peculiarity of breed, which establishes and draws out the powers of endurance of the Arabian breed of horses. But Bingly says, "In this wild and thinly-populated country, the very existence of the owner sometimes depends upon the powers of his horse, and consequently the most innate attention is paid to purity of breed. And it is chiefly in consequence of this, that the race is able to sustain infinitely greater fatigue and abstinence than the horses of any other country. A horse in that country which cannot support itself for three days, under continued bodily exertion, is accounted of little value." More credit, therefore, is due to the actual hardiness and powers of endurance, than to any pedigree. These are never kept by the Bedouins, and only made when the horses are intended for sale.

The Persian Horse, in general appearance, somewhat resembles the Arab, and though in most respects less esteemed than that animal, he is in other points his superior. This horse stands somewhat taller than the Arab, is full of bone, and very fast; that peculiarity, "ewe-neck," so indicative of very high breeding, is very common. Like the Arab, these horses are fed, cleaned, and watered only at sunrise and sunset; their food is coarse and scanty. Hay is unknown as a horse-diet in Persia, the usual food being barley and chopped straw, which, when the horse is picketted, is put into a nose-bag, but, when fed in a stable, it is put into a lozenge-shaped hole, left for that purpose in the mud-built wall, much higher up, however, than our mangers usually are. His sole bedding consists of his dung, which becomes pulverized by the day's sun, and at night is spread out under him, his body, however, being invariably covered with clothing, varied in quality according to the season, never touches this bedding, which therefore can benefit the horse only by its softness. Sir R. K. Porter, in his Travels in Persia, has drawn a graphic picture of the mode in which the Persian horses are stabled at night, and of the uproarious scenes of combat and confusion which sometimes take place among them. After describing how several entire horses are tied in one place, he says—"Their keepers always sleep on their rugs amongst them, to prevent accident; but, notwithstanding all this care, they manage sometimes to break loose, and then the combat ensues. A general neighing, screaming, kicking, and snorting, soon rouses the grooms, and the scene for a while is terrible. Indeed, no one can conceive the sudden uproar of such a moment who has not been in eastern countries to hear it, and then all who have, will bear me witness that the noise is tremendous. They seize, bite,

and kick each other, with the most determined fury, and frequently cannot be separated before their heads and haunches stream with blood." This fury and pugnacity is not wonderful in a breed of animals once the great war-horses of the East, nor, indeed, would the scene differ much were as many English stallions to get loose;—who has not seen the consternation caused at a country show by the snorting and the fury of one which had unhappily escaped from his leader!

The Tartarian Horse resembles the Persian in his swiftness, but there the resemblance, to a considerable extent, ceases. These horses are heavy-headed, very low in the shoulder, awkwardly made, and altogther ill-looking brutes. In the wilds of Tartary, however, there are still some of the original breed, to which we have before alluded, to be met with, which are yet ignorant of the spur, and upon whose neck bridle has never yet hung, whose forms would almost give the lie to our description; and in Tartaria Minor, or Little Tartary, the natives possess a breed so highly esteemed, that they have entered into a compact not to sell any of them to strangers or foreigners.

Perhaps an account of the wild Tartarian horse will not be uninteresting, though Youatt will not admit them to be the original wild horse, but merely individuals which have escaped, associated, and bred together, and so have become utterly untamable and *uncivilized*. Still they have every symptom of the naturally wild animal. Like the wild cattle of Chillingham, (of which an account is given in Milburn's Treatise on the Cow, in this series of handbooks), the mares seem to choose from the herd the strongest male * as a leader, who remains the sire so long as he is the most powerful of the stud. On being attacked, the mares and foals are placed in the rear of the herd, and the young stallions form the van, headed by this their captain. Nay, what more fully indicates their untamed natures, they immediately fall upon, and destroy every domesticated horse which falls in their way, as if to revenge themselves of his unworthy servility.

These wild horses are hunted, mainly for food, by the Tartars, who live on horse-flesh to a very considerable extent, and they follow the sport in a very remarkable manner. Horses and dogs would be quite useless to secure them, so they adopt the more antiquated mode of *hawking*. For this purpose, a species of *vulture* is trained to seize upon an individual: securing its talons on the head and fluttering its wings, the horse becomes so frightened and confounded, that he is easily taken, and either bound or destroyed. They are difficult to tame, and

* This leader is a great object of ambition to the Tartars, whose greatest triumph is to capture him.

require to be taken quite young to be of any use. Youatt traces these wild races to the cavalry horses disbanded for want of forage at the siege of Azof in 1657, but we are inclined to follow Humboldt and Pallas in considering that at least one original breed belongs to Crim-Tartary.

The Tartars eat the flesh of their horses, and use the milk of the mare, from which they also make excellent cheese. From mares' milk the Bashkirs make a kind of wine, called "*Kumiss*," the nutritious properties of which are said to be of a very high order, and it is also decidedly stimulative. An anecdote is related of a certain nobleman who laboured under a complication of chronic disorders: by the direction of his physician, he travelled to Tartary for the sole purpose of trying the effect of this liquor. At starting he was so weak that it was necessary to lift him into his carriage; after a sojourn of six weeks only in Tartary, he returned home perfectly cured, and so fresh and plump that his most intimate friends were at first sight unable to recognize him.

The Turkoman Horse is a variety of the Tartar, but of superior qualities. It is held in high estimation, and will, even in Persia, frequently fetch so high a price as from one to two hundred pounds. The average height of these horses is fifteen hands, and, in their general shape and appearance, they bear no distant resemblance to a well-bred English carriage horse. They are possessed of very considerable speed, but are not *enduring*, being *too small in the barrel*, and too leggy. This breed is occasionally palmed off on English speculators, by crafty Asiatics, as the true Arabian breed. The Turkish Horse is of slender make, carries his head high, is full of life and fire, and possesses a most docile and affectionate disposition. In his form and character he demonstrates his descent, a cross between the Persian and Arabian, or perhaps the Barb. The Turkish horses have long been celebrated for their docility and gentleness, and they are treated with the utmost kindness by their masters and grooms. As an instance of the extreme partiality with which the Turks regard their horses, the following anecdote may not be out of place:—Theophilactus, patriarch of Constantinople, was so passionately fond of horses, that he kept two thousand of his own, fed every day chiefly on saffron and Pistachio nuts. One Holy Thursday, while he was officiating pontifically in the church at Constantinople, word was brought him that a favourite Arabian mare had foaled; he immediately left the service, ran to his stables, and did not return to finish the sacred ceremonies until he had given the necessary orders for the treatment of both mare and foal.

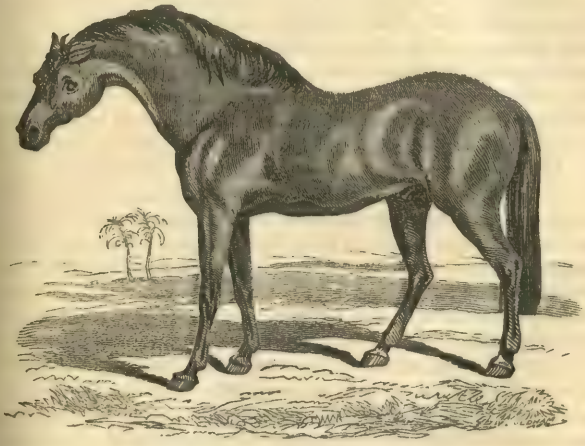
The tail of the horse is, in Turkey, regarded as a mark of dignity, and is, both in that country and in Persia, employed as an emblem of station, princes measuring their rank by the number of tails they carry. The origin of this custom is as follows:—The Turkish army at one time lost its standard in a battle, and a gallant leader, in order to inspire the faltering spirits of his men, cut off the tail from a slain charger, and hoisting it aloft on the point of a javelin, rallied his soldiers, once again brought them to the charge, and gained a victory over the enemy. From this he received a corresponding military distinction, whence originated "Pachas of Tails." Those of the highest ranks are invested with *three* tails. The Grand Vizier is always preceded by standards formed of horse-tails, each surmounted by a gilded ball.

The Hindostanee Horse.—The climate of India does not appear to be congenial to the constitution of the horse, and that animal is invariably found to degenerate, unless the breed be, from time to time, carefully regenerated and sustained by judicious crossing. The most *genuine* native breed, or, in other words, that which has been least affected by *improvement* is called the "*Tazee*."

The Tazee, as ordinarily known, is a small, ill-made, and ugly beast, equally deficient in spirit and in form. This is not, however, the character of the original race, accurately described by Colonel Hamilton Smith as a bold, spirited, and handsome animal, and so fiery as to require a bold rider. Of this race are the "Serissahs" of the North Bahar, of which upwards of twenty thousand are sold at the annual fairs. Between the Tazee and the Persian a mixed race is bred, called in India the Maginnie. So unsatisfactory were the most improved breeds of Hindostanee horses, that the East India Company felt it absolutely necessary to import European science and skill to improve them. They selected Mr. Moorcroft, a veterinary surgeon of some eminence, for that purpose. He much improved their health by introducing oat diet instead of the grain of the country. He urged the adoption either of the Turkoman or the English horse, as the best means of improving the native breed, in preference to the Arab. The purpose was, however, abandoned; and in an expedition to Bokhara, in search of a stud of horses, he perished, it is said, by poison; so his plans were not carried out. Australia has now the almost exclusive supply of horses for our Indian armies; the horses of these regions being strong, hardy, and enduring, they are consequently well adapted for that purpose. There are several other Hindoo breeds; but as it is a matter of notoriety that not one remains the same for three generations, being constantly crossed and re-crossed, it appears

unnecessary to enumerate them. We may, however, just name a few of the best known :—

Such are the *Takan*, strong, powerful animals; natural amblers, and hence in much esteem for the use of ladies. The *Folaree* breed a variety of Takan; tall, but spiritless. The *Cutch*, remarkable for the suddenness with which the withers drop, as if a portion of the vertical ridge of the spine had been cut away; hence difficult to fit with a saddle. The *Dattywarr*, superior in blood to any of the preceding; usually dun-coloured, striped like a zebra. When thus marked, it competes in value with the Arabian.



THE GODOLPHIN BARB.

THE AFRICAN HORSE.—Of this race of horses the principal is that known under the name of BARB. This horse exceeds the Arabian in stature, and is remarkable for the height and fulness of his shoulders, drooping of the haunches, and roundness of the barrel. The Barb does not fetch so high a price in his own country as the Arab, and hence he is frequently imported, and fraudulently passed off on purchasers as that animal. Above is a portrait of that remarkable horse, the Godolphin Barb, sometimes erroneously called the Godolphin Arabian.

Amongst the most excellent of the African varieties of horse may be named the celebrated "Shrubat-ul-reech," or "Drinkers of the wind," in possession of the Maugrabin tribes, shaped like greyhounds, wiry, and fleshless. Mr. Davidson relates that one of these performed a journey of sixty miles, under a burning sun, at the hottest period of an African day, without the rider once drawing bridle. The Arabs ride *mares* only, for they chiefly rely on stealing unawares upon their foes; the Africans rely on force alone, and consequently ride the *horse*, on account of his superior power. Were the Arabs to ride horses, the moment they came within *scent* of the hostile camp, their steeds would betray everything by their neighing.

Towards the central parts of Africa we find the Bornou race of horses extolled by Mr. Sully as possessed of the qualities of the Arabian, with the beauty of the Barb; "they are," he says, "fine in shoulder, and of general elegance of form." The horses of Nubia are stated by the celebrated traveller, Bruce, to be far superior to the Arabian, and the natives trace their pedigrees from five stocks, all horses ridden by Mahomet and his four companions, Abubeker, Omar, Osman, and Ali, in their flight on the night since designated "Al Hegira."

The little kingdom of Dongola, or Donkala, possesses a remarkable breed of horses of a large size, their chief characteristics being great shortness of body, length of neck, height of crest, and a beautiful forehand. Bosman pronounces them to be "the most beautiful in the world." These horses have been imported into our islands, but their progeny have never in any instance turned out well, perhaps from want of judgment in the selection of their mates.

Nothing can exceed the carelessness of the inhabitants of the western coast of Africa of their most valuable animals. Duncan, the African traveller, who rode on horseback ankle deep in dry sand, with the thermometer at 118°, through the burning plains of Africa, says, "The Africans pay no attention either to domestic or wild animals. Even the dog, or the horse, the two most sagacious of all the animal creation, excite in them no interest whatever. If not driven to it, they will suffer a horse to stand for days tied up, without food or water." Their horsemanship seems on a par with their care of the animals, for the King of Dahomy sent two men to hold Mr. Duncan upon his horse when the latter was showing to his Majesty the evolutions of English cavalry!

Of the horses of Egypt Proper it is unnecessary to say much; Egypt, at one time the mart from which came the 40,000 horses of Solomon, has long lost its character as a breeding country, and

its horses are deservedly held much inferior to those of either Persia, Barbary, or Arabia. Though heavy and ill-formed, having generally bad legs, and unable to endure much fatigue, they have great impetuosity, and so far retain the war-character they had in the days of the Pharoahs. Buckhardt describes them as "ugly, of coarse shape, and looking more like a cart-horse than a racer. Thin legs and knees, and short and thick necks, are frequent defects among them." How different from the Arabian! with his muscular arms, his arched neck, and his fine and elegant head; and yet, when the horses of Egypt were in their glory, the Arabians were unknown. So much may be lost by the neglect of cultivation in a race of animals of acknowledged supremity. What they were, in docility at all events, some centuries ago, it may be interesting to learn, and we accordingly insert the following description foom the pen of the well-known Baumgusten, who was a witness of the scene which he describes:—

"In the year 1507 the Sultan of Egypt made ostentation of his magnificence to the Turkish ambassador. There were sixty thousand Mamelukes, in the same uniform, assembled in a spacious plain, in which there were three heaps of sand, fifty paces distant, in each a spear erected, with a mark to shoot at, and the like over opposite them, with space betwixt, sufficient for six horses to run abreast; here the youngest Mamelukes, upon their horses, running at full speed, gave wonderful proofs of their skill. Some shot arrows backward and forward; others, in the midst of their race, alighted three times, and, their horses still running, remounted, and hit the mark nevertheless; others hit the same standing upon their horses then running; others three times unbent their bows, and thrice again bent them, whilst their horses galloped, and did not miss the mark; neither did others, who, in the middle of their race, alighted down on either side and again mounted; nor they who in their swiftest course leaped, and turned themselves backwards on their horses, and then, their horses still running, turned themselves forward. There were some who, while their horses galloped, ungirt them thrice, each time shooting, then again girting their saddles, and yet never missed the mark; some sat in their saddles, leaped backwards out of them, and, turning over their heads, settled themselves again in their seats, and shot, as the former, three times; others laid themselves backward on their running horses, and taking their tails, put them in their mouths, and yet took an undeviating aim in shooting; some, after every shot, drew out their swords and flourished them about their heads, and again sheathed them;

others sat between three swords on their right and as many on their left, thinly clothed, so that without great care every motion would wound them; yet, before and behind them, touched the mark. One stood upon two horses running very swiftly, his feet loose, and shot also at once three arrows before, and again three behind him; another, sitting on a horse, neither bridled nor saddled, as he came at every mark, arose and stood upon his feet, and on both hands hitting the mark, sat down again three times; a third, sitting on the bare horse, when he came to the mark, lay upon his back and lifted up his leg, and yet missed not his shot. One of them was killed by a fall, and two much wounded in these feats of activity."

Designing to leave the horses of our own country for the last, as they will demand our more particular consideration, we now turn to those of AMERICA.

In parts of the southern portion of this vast continent, extending from the shores of the La Plata to Patagonia, are still to be met with innumerable herds of wild horses, and many such are also to be found about the back settlements of its northern portion; both, however, evidently the descendants of domestic horses, that accidental causes have driven to a feral condition. These herds appear to act in admirable concert, and by their united force defy the attacks of the various ferocious animals who share with them the possession of the wilderness. Nor are they formidable only to these equally savage denizens of the prairie; the traveller, if incautious in approaching them, will too dearly rue his temerity or ignorance, and a meeting with such a herd of untamed coursers has often proved to be anything but desirable. When a traveller with laden horses encounters one of these wild herds, even should he personally escape attack, his horses, if they can by any means shake off their burdens, will break away, and join their fortunes with those of their emancipated brethren. When it is deemed desirable to capture these horses, the natives employ a long leathern noose called the *lasso*.

Few wild sports require more skill, or cause more excitement, than catching and breaking those wild animals of the prairie; nor has any one more graphically described it than Captain Basil Hall. The horses which are considered domesticated are kept in inclosures of high posts driven into the ground; but the agility and tact displayed by the wild-horse hunters is beyond all calculation. A herd of horses is driven by a large party of hunters into one of these inclosed grounds, or corals, when the hunter, mounted on horseback, contrives to throw a noose over the head of some selected animal. A young animal is

generally chosen, and he is thus dragged out of the inclosure, and immediately secured by various bandages, until a most daring breaker, trainer, or hunter, as he may be not at all improperly called, mounts his back, when usually off he sets with the rapidity of lightning. Away the horse gallops, a halter of thong in his mouth for a bit, a saddle tightly girthed on, a rider,—rough rider he is, indeed,—well spurred, goading on the affrighted animal until, from sheer tiredness, it stops. He brings it back subdued to the inclosure; its mane and tail are shaved or clipped, and he becomes a willing slave for ever afterwards.

Sometimes, however, the horse turns stupid. He stands fixed and immovable, or even rolls, kicks and paws. These are the most dangerous and difficult to manage; but the skill and agility of the trained breakers, the strength of their thongs, composed of platted skins, and the potency of their spurs are uniformly crowned with victory.

A gentleman, who has given his experience of South American horses in the *Veterinarian*, says, "they are generally smaller than the English horse, and have a very heavy appearance, approaching to something like the dray horses used with us; they are bony, and universally possess a broad chest—a property highly esteemed by the Chillians. I consider them somewhat vicious, though the 'guasos,' or breakers above referred to, pride themselves on being good trainers. They have a custom of training all first-rate horses to jump off at the time of mounting, and with persons unaccustomed to this, accidents often occur, to which I have on many occasions been eye-witness; they are very tender-mouthed, from the very severe bit used in the country, so much so that a horse at the height of his speed can be checked with a little finger. It is a most beautiful sight to see the quickness with which they obey the reins, the slightest check of which brings them completely on their haunches. They never commence training them till four years of age and upwards, and to this I attribute their lasting qualities." They never take the *mares*, nor even ride them; and it is related of an Englishman, attempting once to do so in that country, being hooted and pelted by the natives to such an extent as narrowly to escape with life. The horses of North America are somewhat more hardy, more inured to slavery, and are much valued by the Indian natives, who use them in hunting, in war, and in travel. The acquisition of the horse must have proved a great boon to the wandering savage, and he is recognized as such, to so great an extent, indeed, that stealing the horses of a hostile tribe is conceived to be as heroic an action as the taking of their masters' scalps.

The horses of the *Canadas* are, as might be expected, principally of French descent; and from this stock have sprung many of the celebrated American "trotting phenomena." The horses of the United States are crossed with a great variety of breeds, amongst which the *English* is predominant; for with all Brother Jonathan's good opinion of himself, he is, to a great extent, still impressed with the superiority of articles coming from the "old country;" and perhaps he is not so very far astray in his idea. The Americans are now exerting themselves strenuously for the improvement of their horses; and, amongst other efforts, we are not to overlook the establishment of agricultural shows in various states, particularly in the southern ones; and in these have been, as a matter of course, adopted the customs common to those of Britain.

The horses of the West Indian Islands not unnaturally present themselves to our notice in connexion with those of America. They are chiefly the breeds of the states to which each island more particularly belongs. The horses of Cuba, especially, betray, in a manner too apparent for any mistake, their Spanish origin; and those of the British colonies, on the other hand, present marked evidence of owing much of their blood to the mother country.

The Americans have, from time to time, imported first-rate English blood for the improvement of their stock, and the progeny of many horses of celebrity is yet to be met with in many portions of the States, especially Virginia, Kentucky, and the Jerseys. Amongst these were, recently, "Shark,"—a horse seldom equalled, and decidedly the star of his day—and "Tallyho," the son of "Highflier," to whom the horses of the last-named state owe the best portion of their blood. The American travelling horse must not be overlooked in this brief sketch of the foreign breeds.

CHAPTER IV.

HISTORY OF THE BRITISH HORSE.

THE subject which will probably possess more interest for the reader than any of the preceding chapters, is the history of the horse in the British islands, and his progression, alteration, and improvement, from the earliest periods of which any authentic records remain, up to the present time.

The first mention that we meet with of the history of the horses of these islands, is the era of the invasion of England by the Romans, under the command of Julius Cæsar; and they are mentioned by him in his "Commentaries" in laudatory terms, speaking highly, at the same time, of the skill displayed by those who managed them. These observations prove that the horse must have been long familiar to the natives of Great Britain, as, when in a state of barbarism almost amounting to that of the savage, they had acquired a perfect mastery over it. At this time, too, it would appear that the Britons had acquired the use of gorgeous ornamental housings, and military trappings. Here, however, we find ourselves at fault, and are unable to form even a remote guess at the source whence our ancestors derived this valuable animal, or to point out any modern variety of horse as having sprung from, or as retaining any resemblance to, the primitive stock. Some have referred to the rough and diminutive shelties of Scotland, to the *hobbies* of Ireland, or to the mountain ponies of Wales and Cornwall; but if so, these animals must have greatly altered in form and stature, for, however well, as Pennant justly observes, "they may answer the purposes of these countries—they could never have been equal to the work of war." We conceive the opinion of the late Mr. Youatt to approach the truth more nearly than any with which we have met; he conceives the horse to be "then, as ever, the creature of the country in which he lives. With short fare, and exposed to the rigour of the seasons, he was probably the little hardy thing which we yet see him; but in the marshes of the Nen and the Witham, and on the borders of the Tees and the Clyde, there would be as much proportionate development of frame and strength as we find at the present day." It is certain that the horses of Britain, in the time of Cæsar, were powerful and active, for the war-chariots were of a heavy and clumsy construction, the roads unformed, and only passable by the exercise of extraordinary power; that these animals were valuable, we learn from the fact, that Cæsar carried back several to Rome; and that they were for a considerable time afterwards in much esteem throughout various parts of the Roman empire. Of the numbers of this animal then kept in Britain we may form some idea, from the circumstance that the British king, Cassivellaunus, in disbanding the main portion of his army, *retained* four thousand horse, for the purposes of foraging, and for harassing the Romans. About this period the Romans, finding it necessary to employ active measures in order to maintain a secure position in the country they had just conquered, deemed it advisable to garrison it strongly,

and, consequently, acting on this resolution, they sent into Britain a considerable force, amongst which was a powerful body of cavalry: this, of course, gave rise to a union of the foreign breeds with those of the country into which they were introduced, and this was, in all probability, the first cross to which our British horses had been subjected; nor was this cross to be regarded merely as one with the *Roman* horse. That powerful nation had already established intimate relations with their various neighbours, and horses from many different portions of the then known world, must have formed the component parts of the Roman cavalry. Whether any *improvement* in our British horses is to be attributed to the Roman conquest is, however, questionable. The Roman cavalry could never have been very respectable, when a deformity, in the case of Cæsar's own horse, which seems to have possessed some elongation of the hooves of the fore feet, was made a subject of rapturous applause, and was deemed such a perfection as to call for the tribute of a public statue; nor were the Romans, at this period, by any means the equal of the Greeks in the art of war, or in the appliances they were able to bring into the field of battle. That the horses of Greece were, at this time, superior to those of Britain, is just possible; but we may well doubt the fact; and in reference to the Romans, I think we may discard doubt altogether. The Anglo-Saxon conquest, doubtless, introduced a variety of other breeds of horses into England, some of which, especially the Frisonic and Danish, were animals of no inconsiderable beauty and stature, and consequently, well calculated to improve our native race.

From the period of the Roman invasion we do not find any mention of the horse in Britain until the year 631, when we find the use of the *saddle* mentioned by the Venerable Bede, who states that prelates and other dignified persons, who had, until then, been obliged to go on foot, now rode on horseback. He further states that the dignitaries of the church used the *mare*, and not the *horse*, as a mark of their humility.

King Alfred, of learned and pious memory, the hero of many a tale of valour and romance, exerted himself in the laudable work of improving the indigenous breeds of horses, and that these intentions should be the better carried out, an office was created for the occasion, answering to our modern "Master of the Horse," this officer was called *Horsethane*. Athelstane, grandson of Alfred, who reigned at 980 years after the landing of the Romans, devoted much attention to the subject of improvement; and so jealous was he of neighbouring nations profiting by his exertions, that he prohibited strictly the exportation of horses, unless designed as presents. These enactments furnish the

inference, that our horses were then valuable, and that their value was duly appreciated by foreigners.

Although Athelstane did not choose that foreigners should improve their horses by his means, he appears to have had no objection to avail himself of whatever advantages they possessed in this respect, for we hear of him accepting a present from Hugh Le Grand, King of France, father of the celebrated Hugh Capet, and the then suitor of his sister, Ethilda, daughter of Edward. Athelstane valued these and other presents of foreign horses highly; and in his will he made a careful testamentary disposition of them, particularizing the several presents, as "Those given him by Thurbrand, together with the white horses given him by Liefbrand." These persons were *Saxons*, so it is probable that they were Saxon horses; but, besides these, we find it related that "sundry princes sought his alliance and friendship, and sent him rich presents, precious stones, perfumes, and the *finest horses*, with *golden furniture*." The horses sent this monarch by the French king are stated to have been "*German running horses*."

Athelstane reigned about A.D. 930, and we find, in a document bearing date A.D. 1000 (quoted by Captain Brown, as also by Mr. Youatt), a curious account of the value of horses in those days. If a horse were destroyed, or lost through negligence, the compensation to which the owner was declared to be legally entitled, was thirty shillings; a mare or colt, twenty shillings; a wild, or untrained mare, sixty pence; a mule, or ass, twelve shillings; an ox, thirty pence; a cow, twenty-four pence; a pig, eightpence; and a MAN, *one pound!*—Howell *dha* (or the good), who lived a short time previous to this, had enacted laws restricting the price of horses, as well as establishing certain regulations relative to this description of traffic, designed to prevent *fraud:* so early had *jockeying* become notorious in horse-dealing.

William the Conqueror brought many horses with him from *Normandy*, and thus contributed, in no small degree, not only to the number of varieties known amongst us, but to the positive improvement of those which we already possessed. It is probable, that the horses imported thither by William were not confined to the French varieties alone, but were brought from other countries also; for his own favourite charger, ridden by him at the celebrated and eventful battle of Hastings, was a Spanish horse; and it is the general impression of historians, that to his *cavalry* William was mainly indebted for his success on that memorable occasion. Roger de Boulogne, afterwards created Earl of Shrewsbury by the victor, introduced several Spanish

horses into the kingdom, especially into his own estate of Powisland. These are noticed by Giraldus Cambrensis, and their excellent qualities are celebrated in verse by Drayton, the poet; neither of these parties, however, have favoured us with any description of them calculated to prove intelligible to a modern reader. Beranger, on what authority I know not, describes these horses as having been of a class peculiarly adapted to the "purposes of war, and the exhibitions of public assemblies, of which horses are always a very essential and ornamental part; for it is not known that horse-racing was introduced into England at this time."

It may be interesting to our *agricultural readers* to learn that, until a comparatively recent period, we find no record of the horse having been employed to draw the plough, oxen alone being used for that purpose; and we find a law enacted in or about the latter end of the twelfth century, *prohibiting the use of horses in the plough*. This, we think, proves that some change in agricultural matters was even then commencing, especially as we have a piece of tapestry, woven in this reign, of that description known as "Bayeux tapestry," representing a man driving a horse in a *harrow*. This is the earliest notice we have of horses employed in field labour.

In the reign of Henry I., in the year 1121, two fine horses of Arabian or Barbary blood were imported into Britain; one was introduced to the court of Henry of England, the other was presented to the Church of St. Andrews, in Scotland, by King Alexander I. Col. Smith (*Nat Lib.*) expresses it as his opinion, that both these horses were *Barbs*, and procured from Morocco, through the medium of the Jewish dealers. Mr. Youatt says that the pretensions put forth of a breed of modern racing-horses having been derived from this stock, are devoid of foundation. In the reign of Henry II., as appears from a curious and scarce Latin tract, such public exhibitions as tournaments and horse-races had become comparatively common. They are spoken of by Fitzstephen, the monk, in his description of London; and his descriptions are written with an animation that seems little accordant with the gravity of his profession. These exhibitions were then held in *Smithfield*, which appears to have been an extensive horse-mart, the resort of merchants and others. The name of *Smith*-field is a corruption of *smooth* field (*planus campus*). Fitzstephen says—"Without one of the gates of the city is a certain plane, or *smooth*, both in name and situation. Every Friday, except some festival intervene, there is a fine sight of horses brought to be sold. Many come of the city to buy or look on, to wit, earls, barons, knights, and citizens. It

is a pleasant thing to behold the horses there, all gay and sleek, moving up and down ; some on the amble and some on the trot—which latter pace, although rougher to the rider, is better suited to men who bear arms. There, also, are colts, yet ignorant of the bridle, which prance and bound, and give early signs of spirit and courage ; there, also, are managed war-horses, of elegant shape, full of fire, and giving every proof of a generous and noble temper ; horses, also, for the *cart*, *dray*, *and plough*, are to be found here."—*Leland's Itinerary*, vol. viii.

The period of the crusades now followed, and these enthusiastic enterprises were the cause of much diminution in the number of our horses, though, possibly, of some improvement also. Thousands of noble steeds were carried to the East by their infatuated masters, many of whom perished on the field, or, if spared life, were usually so poor as to be scarcely able to defray the expenses attendant upon their own return, far less to bring home their horses. That some valuable horses were at this time brought to England from the East there can, however, be little doubt, and many legendary tales of the Arabian steeds of Richard the Lion-hearted, still exist. Among others, I may mention an old ballad, which runs—

> " In this world they hadde no pere,
> Dromedary and destrere,
> Steed, rabyte, ne camele ;
> Goeth none so swifte, without fayle."

The king also purchased (1185) fifteen brood-mares, for which he paid the sum of two pounds twelve and sixpence, and subsequently distributed to his tenants at four shillings each — a circumstance indicative at once of the king's desire of improvement, and of the value of money at that time.

Perhaps the only redeeming point in the character of King John was the attention he paid to the improvement of our native breed of horses. It is recorded of him that he imported one hundred choice stallions from *Flanders*—a most important improvement, as being eminently calculated to raise our *agricultural* horses to such a standard of power and vigour as was requisite for field labour and for draught ; and, in the same reign, we are told that a private gentleman, named Amphtil Till, possessed a noble breed of horses ; but, falling under the displeasure of his capricious prince, he was *imprisoned*, and condemned to pay a fine for ransom—a fine, also, characteristic of the royal passion, viz., *ten horses*, each worth thirty marks, which is equal to about £300 of our present currency. When an almost absolute prince possessed so strong a passion for an individual pursuit, and was so

little scrupulous in the means he employed for the gratification of any of his whims, it is not to be wondered at that his personal stud was both numerous and excellent.

The next period in which we find any particular mention of horses is about a century afterwards, when Edward II., in the second year of his reign, gave a commission to one Bynde Bonaventure and his brother, for twenty war-horses and twelve draught-horses, to be purchased in Lombardy (*pro viginti dextrariis et duodecim jumentis emendis in partibus Lombardiæ*), requiring all his friends and loving subjects to assist in carrying the commission into effect. John de Trokelow, who wrote the annals of this prince in 1307, bears strong testimony to his zeal for their improvement.

Edward III. was devotedly attached to tournament and other similar shows of a military description; hence his warm encouragement of horse-breeding. Among other instances of his zeal in this respect, may be mentioned his purchasing fifty Spanish chargers, at a price of one thousand marks. We also find him indebted to Count Hainault in the sum of twenty-five thousand florins, for horses which he had purchased; and on another occasion we find him sending to France for four *chargers* or great horses (*pro quatuor dextrariis seu magnis equis*). Edward was making preparations at this time for a war with Scotland, and, accordingly, when a German dealer had imported some Flemish horses on speculation, he was only permitted to re-embark them on condition of not taking them to Scotland. Our modern readers will, perhaps, learn with some surprise that all these war-horses (*dextrarii*) were taught to *amble;* and in the account of Edward's disbursements, for the horses he obtained from France, we find one item for *trammels*, for the purpose of *teaching horses to amble;* indeed, the obvious derivation of the word *trammels* is from the Italian *trammenare*, to *wriggle*—a term very expressive of the motion called *ambling*. This prince had also many *running horses*, which were probably used for hunting and racing, being of a lighter and more active form than those called *dextrarii*. The price of a *running horse* was, at that time, £3 6s. 8d. This prince also crossed the heavier with the lighter breeds, and thus produced a noble race of horses for the chase—a pursuit to which he was devotedly attached. It may be added, that it was during this reign that horses were first classified according to their different qualifications and uses.

The mode in which combats were decided in the olden time, by hand to hand combats, and under defensive armour, had a strong tendency to keep up the bulk of the horse and prevent improvement.

This continued until the introduction of the use of gunpowder, which was invented by a monk of Cologne, named Swarth, about the year 1330. From this period the British breed of horses steadily improved, and became known and valued everywhere. As a matter of course, they speedily became a subject of considerable traffic, and this traffic soon led to frauds on the part of dealers; hence we find Richard II. enacting certain laws with a view to the prevention of dishonest speculation; in 1386 he issued an edict to regulate the prices of the different descriptions of horses then in use. From this edict, as being principally directed to the counties of Lincoln, Cambridge, and York, we can perceive that they were then the principal breeding districts of England; and it is scarcely necessary to remind our readers that the last-named county continues to the present day so famed for its commerce in horses, as well as for the cunning of its dealers, as to have passed into a proverb—few but are familiar with the expression, "To come Yorkshire over us;" hence, possibly, the phrase, too, of being "too far north," and the appellation of "Yorkshirebites." The civil wars which arose at or about this time, by throwing the kingdom into confusion, and setting one portion of the inhabitants against the other, not only checked the improvement of the horse, but caused our breeds to retrograde; accordingly, we find Philip de Comyns speaking in very disparaging terms of the English army with which Edward IV. disembarked in France.

The only notice of a horse during the reign of Richard III. that we have been able to obtain is, that in it *post-horses* and *stages* were first established (A.D. 1483).

Henry VII. encouraged the breeding of valuable horses; and it is related by Polydore Virgil that the English used to keep large herds of them in their pastures and common fields, and that when the harvests were gathered in, the cattle of different owners fed promiscuously together; hence the *horses* had to be emasculated in order to avoid disorder—a practice further rendered necessary, in consequence of an act passed in this reign, that no *entire* horse should be let out into any common pasture. This seems to have given rise to our modern appellation of *stallion*, or *stalled one* (*equus ad stabulum*), by contraction *stallum*, then *stallion*. This king also prohibited the exportation of stallions, and also of such mares as were under two years old, and over the value of 6s. 8d. By means of this arbitrary edict, the best animals were kept in the kingdom, and only the comparatively worthless permitted to leave it. In vindication of these acts of parliament, it may be stated, that at this time the ex-

portation of valuable horses had become excessive; thus unnecessarily enhancing the price of such as remained. Indeed this is recited in the preamble to the act, but seems strangely overlooked by Colonel Smith, who states the enactments to be *unintelligible*. It should also be added, that these enactments were only aimed at *dealers*. Any person might take out of the country horses of what quality he pleased, provided that he made oath they were *bona fide* for his own use, and not for sale,

Henry VIII. paid particular regard to the raising of a good breed of horses, and did not hesitate about forming stringent laws in order to carry his intentions into effect. Some modern writers have censured this king very severely for these enactments. and have made them an occasion for a general review of the least amiable points of his character. It is not for us to defend Henry VIII. as a *king*, but we cannot avoid defending the very politic enactments which he promulgated, with a view to the improvement of horses in these islands; true, they were arbitrary enough, but those were arbitrary times—times that will not admit of being judged of by comparison with the present. It is well known to all breeders, that in order to produce a large and vigorous progeny, it is essential to select parents, on both sides, of the most desirable form; and when it is wished to raise the general character of the horses of any district or country, there could be no better or more certain plan adopted than prohibiting all *inferior* descriptions for breeding. Such was the course adopted by this king, and a law was accordingly passed, directing that every brood-mare should be, at least, fourteen hands high; and so marked was the effect produced by that statute, that Carew, in his *History of Cornwall*, suggests that to this was to be attributed the almost total loss of the small horses, formerly so common in that part of England and in Wales—a loss which Carew regrets, but which has been amply replaced by a race of large and servicable animals.

There were further enactments passed in this reign, all with an evident view to the attainment of a large and powerful breed; some of these were very singular in their character. For example: every archbishop and duke was obliged, under heavy penalties, to keep seven entire horses, each above three years old, and not less than fourteen hands high; each parson holding a benifice to the value of £100 yearly, or a layman, *whose wife should wear any French hood or bonnet*, was obliged, under the penalty of £20, to keep *one such horse*. The obvious reason of enjoining entire horses to be kept, was for the promotion of breeding; and with a consideration that was hardly to be

expected from so peremptory a king, the rich and noble were alone compelled to keep *stallions*, their *keep* being so much more expensive, while the humbler classes might keep such mares and geldings as they thought proper.

It being found that the nature of the pasture in some counties, as Cambridge, Huntingdon, Suffolk, Northampton, Lincoln, and Norfolk, was unsuited to the raising of horses of the required bulk, a statute, Henry VIII., 32, cap. 13, was passed, excepting these counties from the operation of the preceding law, and reducing the required standard to thirteen hands. In the 32nd of Henry VIII., cap. 13, sec. 9, *infected horses* were also prohibited from being turned into public pastures, a regulation as sound as it is politic.

It was in this reign that the celebrated meeting of Henry with Francis, King of France—known as The Field of the Cloth of Gold—took place; and on this occasion the English monarch is stated to have done his *devoir* as a bold and brave knight should.

Fitzherbert, a writer on agriculture, in 1548, gives the following as the points of what was then considered a good horse, and which is very interesting, as showing the notions of experience at this period. He says, in his quaint style, "A good horse hath fifty-four propertyes, that is to say, two of a man, two of a barson, or a badger, four of a lyon, nine of an oxe, nine of a hare, nine of a foxe, nine of an asse, and ten of a woman.

"The two propertyes that a horse hath of a man,—to have a proud herte and to bee bolde and hardy. The two properties of a barson,—to have a white rose or a ball in the forehead, and to have a white fote. The four propertyes of a lyon,—to have a broade breste, to bee stiffe docked, to bee wylde in countenance, and have foure good legges. The nine propertyes of an oxe,—to bee brode-rybbed, to bee low brawned, to bee shorte pasterned, to have great senews, to bee wyde betwene the challes, to have greate nosethoylles, to bee bygge on the chyn, to bee fatte and well fedde, and to bee spryghte standing. The nine propertyes of a hare,—stiffe eared, to have greate eyes, rounde eyes, to have a bare head, to have leane knees, to bee wyght on fote, to turn upon a little ground, to have shorte buttockes, and to have two good fylletes. The nine propertyes of a foxe,—to bee pryche-eared, to bee lyttell eared, to bee round-syded, to bee syde tailyed, to bee short-legged, to bee blacke legged, to bee short trottynge, to bee well coloured, and to have a lyttell head. The nine propertyes of an asse,—to bee small mouthed, to bee longe rayned, to bee thin cressed, to bee streyght backed, to have small stones, to bee lath legged, to bee round footed, to bee holow footed,

and to have toughe bone. The ten propertyes of a woman,—to bee mery of chere, to bee well paced, to have a brode forehead, to have brode buttocks, to bee hard of ward, to bee easeye lape uppon, to bee good at a longe journey, to bee alwaie besy with the mouthe, and ever to bee chowying on the brydell. It migght fortune I could showe as many defaultes of horses as here bee good propertyes, but than I should breake my promise that I made Grombolde Brydge the firste time I wente to Ryppon for to bye coltes. But it is to suppose, that if a horse want any of these good propertyes, that he should have a defaute in the same place. And this is sufficient for this tyme."

It is a fact, and one much to be regretted, that all King Henry's enactments appear to have fallen short of the mark, and to have produced only temporary, and not permanent, improvement: for when Queen Elizabeth called out the entire strength of her cavalry to oppose the Spaniards, she could only muster a force of three thousand mounted men-at-arms. That there were still, however, fine horses in the kingdom, cannot be questioned, for Ulysses Aldrovand says that there were so, but principally in possession of the nobles. Some have referred this failure to the tyrannical character of Henry's enactments; but it is far more likely to have been owing to the superiority the British horses rapidly attained during the middle portion of his reign, which caused them to be eagerly purchased up, and taken out of the kingdom by foreign grandees for purposes of state—a circumstance much promoted by the introduction into the kingdom, at the time, of *Italian farriers* and *foreign grooms*, who, of course, had the welfare of their native country far more at heart than they could have had that of a foreign one.

Edward VI. reigned long enough to introduce one stringent act in favour of the horse: he made horse-stealing a felony, and that *without benefit of clergy* (1 Ed. VI., cap. 12).

Queen Elizabeth was fond of horses, and she was herself a bold and spirited horsewoman, riding to the hounds even at the advanced age of seventy. In the commencement of her reign (8 Elizabeth, cap. 12), she repealed the statutes enacted by her father, as to the standard size of the horses to be kept in certain English counties. In the twenty-second year of this reign, *coaches* were first introduced, A.D. 1580, by Fitz Allen, Earl of Arundel. Up to that period, the first ladies of the land had no other mode of conveyance than to ride behind a gentleman on the pillion, and even the queen rode thus behind her Master-of-Horse when she went in state to St. Paul's. The introduction of coaches tended much to improve the breed of

horses, as, up to that period, slow, heavy brutes were preferred; and this may therefore be regarded as one of the most important epochs in the history of the horse in Britain. The use of coaches also gave rise to an increased demand, and at length, so great was the number of horses thus employed, that a bill was actually introduced into the House of Lords, "to restrain the excessive and superfluous use of coaches." The lords, fortunately for the improvement of horses, did not entertain the bill, but desired the attorney-general to inspect the former statutes for the promotion of the breed of horses, and to introduce some other bill in its stead. It is, however, certain that some bill was introduced which had a tendency to revive the old practice of riding on horseback, in preference to being conveyed in coaches; or else that some of the old school still persisted in keeping up antiquated usages, for we find that in the reign of James I. the judges rode on horseback to the courts of law in Westminster Hall.

Gunpowder and its appendages and appliances having now taken the place of heavy armour and the lance, a lighter and more active breed of horses began to be cultivated; for even when armour continued to be used, it was of a light and partial description. Of the effects of the change upon the character of our horses we can readily judge from the expressions of Sir John Smythe, who wrote in the year after the memorable attempt of the Spanish armada. He says:—"Their horsemen also serving on horseback with lances, or any other weapon, they think very well armed with some kind of head-piece, a collar, and a deformed, light-bellied beast." Such was the origin of our light and fleet breeds of horses, which became as necessary as the weight of the rider decreased, as were the more heavy and powerful, so long as the ancient ponderous armour continued to be worn. It has been said that some of the Spanish horses escaped from the wreck of the armada, and were the originals of the breed of galloways in Scotland.

In Elizabeth's reign, tournaments continued in high repute; and in that of James I. of England and VI. of Scotland, every description of horsemanship received, if possible, still greater encouragement. Horse-racing now became extensively cultivated and promoted. This prince had established this sport in Scotland, but unfortunately his system was *wrong*, consisting almost wholly of matches against time, or trots of long-continued endurance. Croydon and Enfield chases were his favourite courses. It might be that James bore in mind the old legend of the Arabian steed formerly presented by King Alexander to St. Andrews, for he at once set about introducing Arab blood into

the kingdom; and his first essay was the celebrated MARKHAM ARABIAN, for which he gave to a merchant of that name the very sporting price of *five hundred pounds*—no ordinary figure in those days, but equal to at least two thousand pounds of present currency. This is the first *truly authentic* Arabian that ever reached England. What the exact characters of this horse were we possess no means of ascertaining; but the Duke of Newcastle,—considered the greatest judge of horse flesh of his day,—conceived such a dislike to him, that, in his *Treatise on Horsemanship*—a book, by the way, displaying much judgment—he describes him as a little, bony, bay horse, of ordinary shape, and almost worthless; and it is certain that, after training, he was unable to run. Possibly his failure was due to the prejudices of his trainer.

The failure of this first attempt to introduce foreign stock did not, however, discourage James: he had conceived an idea which was not to be lightly removed, and he accordingly purchased, from a Mr. Place, a horse which had been brought from the northern coast of Africa. This horse was the celebrated "WHITE TURK," and this Mr. Place was afterwards stud-master to Oliver Cromwell. This importation was speedily followed by the introduction of "the Helmsley Turk," by Villiers, the first Duke of Buckingham, to which that fine horse, called the Morocco Barb, was added by Lord Fairfax. From this period improvement rapidly advanced—indeed so rapidly as to call forth the lamentations of Lord Harleigh, for the visible diminution of the old stock, known as the "Great Horse."

Charles I. followed up the advantages which James had already secured, and warmly encouraged both racing and hunting; indeed, to such an extent was the breeding of light and rapid horses brought by this prince, that it became the subject of a memorial, setting forth that the breed of stout and powerful horses, "fit for the defence of the country." was likely altogether to disappear, unless measures were taken to prevent their doing so. This prince first substitued the use of the *bit* for the old *snaffle*.

Cromwell, Puritan though he was, or affected to be, had his stud of race-horses, and proved that he felt mere bone and bulk to be no match for speed and endurance; he therefore recognized horse-racing as a means of promoting the breed of active coursers, to be connected with his country's welfare. Cromwell had himself trained, in his "Ironsides," the best regiment of cavalry, probably, at that time in existence.

The Restoration seems to have given a fresh impulse to racing,

and, consequently, to light horse-breeding; not only were the courses already established by Charles I. at Hyde Park and Newmarket, still encouraged and patronized by royalty, but others were added to the number, and the monarch himself became a competitor for the prizes. These prizes had, up to this period, consisted of a *bell*, a simple trophy; and hence the common phrase, intended to imply success, "he bore away the bell." *Bells* were now abolished, and a *cup*, or piece of *plate*, to the value of one hundred guineas, substituted for them. Newmarket assumed the lead, and that position it has ever since occupied. We may add that, in more recent times, the *cup* or *plate* is not always to be taken in the literal sense of the words, the actual value, viz., one hundred guineas, being, in nearly every case, given to the winner instead. Charles II. sent his master-of-horse to the Levant in order to procure horses and mares. These were, of course, from the locality, most frequently Turks or Barbs, but speedily every description of eastern horse became engrafted on British stock.

James II. reigned too short a time, and even that short period was of too unsettled a character, to admit of his doing much for the improvement of our horses; he was, however, an excellent horseman, and understood the animals well. It is probable that it is on this account that he is still popularly called in Ireland "Shemus-na-cappul," or "James of the horses."

William III. established a riding-school, under the management of a French gentleman, named Major Foubert; he also added several *plates* in different parts of the kingdom.

Queen Anne encouraged racing, and not only continued a bounty equal to that of her predecessors, but added several new plates. It is possible that much of her encouragement was due to the influence of her cousin, Prince George of Denmark. Towards the end of this reign the prejudice against Arab blood, which originated in the failure of King James's horse, was effectually removed by the introduction of the celebrated Darley Arabian. Mr. Darley procured this beautiful horse from his brother, a merchant settled in Aleppo. This was the horse truly calculated to perfect our British stock, and to render it what it has ever since continued, the first in the world! Of the Darley Arabian, little need be said beyond stating, that he was the sire of "Flying Childers," the fastest horse that ever ran. Flying Childers ran over the course at Newmarket, a distance of three miles, six furlongs, and ninety-three yards, in six minutes and forty seconds; over the Beacon course (four miles, one furlong, and one hundred and thirty-eight yards), in seven minutes and thirty seconds; and also accom-

plished very nearly one mile in a minute. Such was the first progeny of the Darley Arabian with the English racer. The British horse is now the fastest in the world, and far superior to the Arab even in swiftness. It is not many years since Pyramus, the best Arab in Bengal, was beaten with ease by Recruit, an English racer of scarcely fourth-rate merit.

George I. continued the royal patronage of the turf, and was the first to discontinue the practice of giving *cups* or *plates*, giving *specie* to the value of one hundred guineas in their stead.

George II. adopted the policy of putting a tax on horses: the best that can be said for this policy is, that it is calculated alike to retard the progress of an inferior race of horses, and to remove from the lower class of people much of the temptation to attend races. This was embodied in an Act of Parliament, passed in the thirteenth year of his reign (cap. 2). By which it was enacted, that for any and every horse, a certain tax should be paid, besides other particulars, which want of space prevents our mentioning.

In the reign of George III. special taxes were imposed upon race-horses, and in the twenty-fourth year of this reign, cap. 26, it was enacted, that every running-horse, entered to start for any plate or other prize, should, in addition to all former imposts, pay the sum of £2 2s.; "and the owner thereof shall previously pay two guineas, as the duty for one year, to the clerk of the course, or other authorized person." This king, for a man of so religious a turn of mind, as he is represented, was strangely attached to racing, which, however, as has been shown, he endeavoured to strip of its abuses, probably conceiving that horse-racing, when properly conducted as a mere trial of speed, was legitimate, and calculated to produce good effects, while it was its abuse alone that rendered it incompatible with true religion. By the zeal of this monarch public riding-schools were established, and this led to the establishment of many private *menages* by the princes of the blood and persons of fortune. His majesty had also one erected specially for himself. He also instituted the first veterinary college, with a view to placing the treatment of horses and cattle under disease upon a proper footing; a French gentleman of much skill was appointed professor, by name, Monsieur de St. Bel.

George IV. was devoted to the horse, to horsemanship, and to the turf, from his earliest years; and during his reign these amusements attained a height hitherto unprecedented, and, we may perhaps add, unsurpassed since. During this reign, at the termination of our differences with France, the French became infected with our enthusiasm for horse-racing; and our system, regulations, and even the

costume of our jockeys, were all eagerly adopted. The Duke of Orleans was the first who assumed the dress of an English jockey in France, and his example was speedily followed by many of the leading nobility.

William IV. having been brought up to the sea, did not, of course, feel much personal ardour for the turf or for horsemanship; he, however, not only offered no discouragement to it, but by his presence and countenance lent to it all the patronage he could bestow.

Victoria, our present gracious sovereign, affords every possible encouragement to equestrian amusements. She is herself an excellent horsewoman, as well as a fearless one. To his numerous and varied accomplishments Prince Albert is now able to add that of horsemanship. On his first arrival amongst us he displayed some degree of awkwardness in the saddle, which was eagerly commented upon by some of the low and disreputable portions of the press. The fact is, this apparent awkwardness arose from the method of *breaking* the horse in Germany differing so materially from that in use amongst us, which occasions a difference of *action*, and hence the *apparent* awkwardness which he at first displayed; the difficulty did not long remain unsurmounted, however, and Prince Albert is now as remarkable for his graceful riding as he is for every other acquirement necessary to constitute the gentleman;—long may he and his consort, our beloved queen, live and reign!

Having traced the history of the horse in England, from the earliest time of which we possess any record to the present day, and though, to many, such an account must have proved wearisome, we trust that to the majority of readers the contrary has been the case, and that the preceding detail will rather enhance the interest which will be experienced in the more practical portion of the work.

Before, however, proceeding to those particulars, it is necessary to say a few words of the horses indigenous to SCOTLAND and IRELAND.

In Scotland, a small race of horses has existed from time immemorial, remarkable for their symmetry of form and docility of disposition, and known by the name of Galloways. So much esteemed were these little horses in former times, that it became necessary for the Scottish monarchs to restrict their exportation. Tradition says that these horses are of *Spanish* origin, and that they originally sprung from Spanish horses which swam ashore from some of the ships composing the redoubted Spanish armada, which were wrecked upon the western coast of Scotland. This scarcely agrees, however, with the

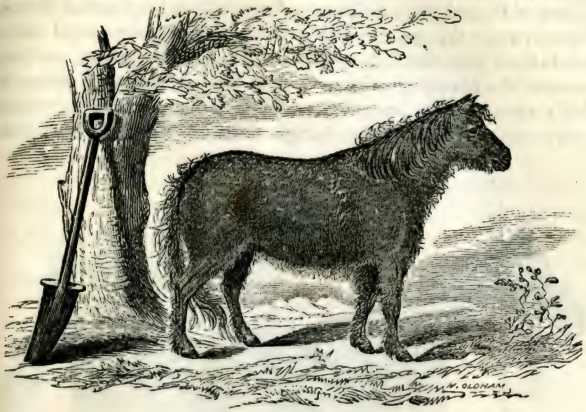
other statements made respecting them; and we are inclined to think them the ancient native breed.

In the islands and northern counties of Scotland is also to be met with a small, rough, hardy race, scarcely exceeding a large dog in size, and called *Shelties*. With the exception of the head, which is generally somewhat too large, these little creatures are most symmetrically formed, being, indeed, almost miniatures of the Arabian.

THE HIGHLAND PONY.

One of these most beautiful Shelties is in the possession of Mr. Vernon, of Clontarf Castle, near Dublin. Most Shelties present some objectionable points about the head—in some instances, almost amounting to deformity. This faulty conformation is not present in Mr. Vernon's pony, he being, not only in this, but in other respects, symmetrical, as will be seen by the portrait which, with the aid of the pencil and graver of Mr. W. Oldham, is given on the opposite page. This little pony is of a black colour, with a white star upon his forehead; is rough, with an abundant mane and tail. He stands rather under thirty-six inches in height; but his size will be, perhaps, better understood, when it is mentioned that both Mr. Vernon and the writer of these pages, when sitting upon his back, touched the ground at both sides with the feet, neither of us being quite six feet high.

This little animal was brought over by Mr. Vernon from Scotland during a tour through the Highlands and islands of the western coast



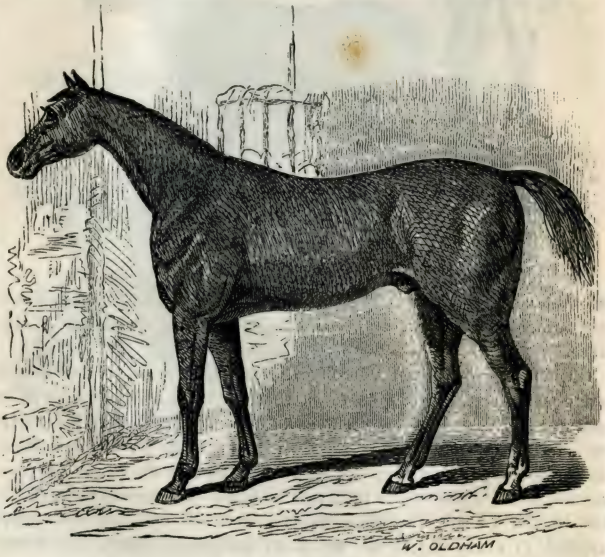
MR. VERNON'S PONY.

of that country. He is remarkably docile and good-tempered, and altogether, as has been observed, one of the best specimens of the race.

Ireland also possesses an indigenous breed of horses. These horses are of small size, but of good form, very strong in proportion to their stature, active, and of excellent constitution. These were popularly called *Hobbies;* they were formerly in much esteem, both in their native country and in England, and so great was the mania for possessing them, which at one time existed almost universally throughout the British Islands, that their name became afterwards proverbially applied to every object on which an individual placed inordinate affection. "He is on his hobby," is an expression too familiar to require the reader to be more than reminded of it.

Many of the old writers speak in complimentary terms of these little horses, and bear testimony to the high degree of estimation in which they were formerly held. Both Strutt and Campion have recorded their value in their works, as witness the following passages:—"Horses they have of pace easie, in running wonderful swift. Therefore they make of them great store, as wherein at times of need they repose a great piece of safetie." "I heard it verified by honourable to honourable, that a nobleman offered, and was refused,

for one such horse, an hundred kyne, five townlands, and an eery of hawks yearly, during seven years." It has been asserted that the climate of Ireland is too moist to be favourable to the breed of horses. The only reply that we can give to this assertion is a practical one—look to these "hobbies," the indigenous breed of the country, ere they possessed the advantage of crossing from English or foreign stocks, so highly valued everywhere; look at the performances of more modern Irish racers and hunters. As a sample of the latter we give this figure.

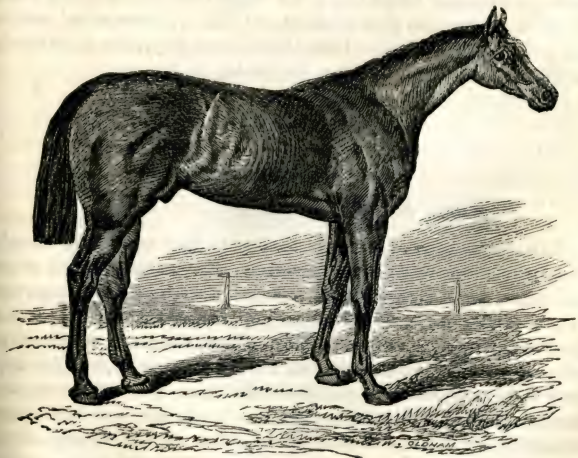


THE IRISH HUNTER.

We shall also relate one or two of their performances. In the month of October, A.D. 1741, a Mr. Wilde undertook to ride 127 miles in nine hours; he performed it in six hours and twenty-one minutes, riding ten horses, making due allowance for mounting, dismounting, and refreshment. This took place at the Curragh meeting (Kildare) of that year. The following redounds more to the credit of the horse than to that of the inhuman rider:—Two Irish grooms were drinking at the door of a public-house, one having with him, for exercise, a favourite hunter of his master's; the trifling bet of a glass of whisky

was made that the horse would not clear a neighbouring wall. The drunken brute at once accepted the wager, and turning his horse, put him standing at the wall, the height considerably exceeding seven feet. The poor horse, not having imbibed the same maddening stimulant as his rider, refused the leap. The groom immediately wheeled him round, cantered him a short distance, so as to obtain a run, and then putting the poor animal at speed, once more faced him at the wall. The noble creature, too full of spirit to refuse a second time, rose his best—alas! the height of the wall far exceeded the powers of any horse unfurnished with wings, and the generous animal forfeited his life to his courage. His fore-feet striking the summit, he grounded on the other side, and both fore-legs were broken in the fall. Unfortunately, the wretch who rode him escaped almost uninjured. The horse's owner being absent from home, the poor animal was suffered to linger for several days in agony; when the owner returned he was shot.

It is principally as high leapers that the Irish horses are renowned, and in this class of performance we believe they are unrivalled; nor



FOIGH-A-BALLAGH, THE IRISH RACER.

is their style of leaping that of an ordinary horse, taking a moderate elevation in "a fly," as a horse in training will take the bar in a riding-school. The Irish horse leaps with a single bound, all his form

collected together, rests lightly for half a second upon the summit of the obstacle, and springs as lightly down. The leap of the Irish horse resembles as closely as possible that of the *deer*, and the elevation they will clear in this manner, frequently equals the height of their heads. Until a recent date the Irish horse was valued almost exclusively as a hunter, and for steeple-chases; but events in the racing world have since shown that on the turf he is as little to be despised as after hounds. The performances of Harkaway, The Baron, Foigh-a-ballagh (of the last named of which we here give a portrait), and a host of others, evincing first-rate speed, are sufficient to remove any slur that might ever have been attempted to be cast upon the speed of the Irish horse. It is not, however, to be denied, that the Irish horse occasionally possesses some peculiarities of shape which might displease an English eye; amongst others may be enumerated a certain degree of *angularity* or *raggedness* of form, and in many a tendency to too great thickness and shortness in the forehand. No writer, however opposed to the admission that anything *perfect* can come out of Ireland, has refused to acknowledge in the Irish blood-horse the attributes of great power, proportioned to his bulk; of a happy combination of spirit and fire, with, for the most part, mildness and docility, courage and gentleness and bottom. The best Irish blood-horses may, indeed, fearlessly vie with those of any country in the world.

CHAPTER V.

BREEDS OF HORSES CELEBRATED FOR SPEED.

The classification of horses according to their qualities is clearly the most scientific mode of arrangement. For instance, speed is the great desideratum both in the racer and the hunter; and though not the only quality necessary for the purpose, is clearly the principal one. Speed and power are united in the roadster, the coach and carriage horse, and the Cleveland; whereas, for the purposes of draught only, power and strength are the principal requisites. The different races of draught animals, whether agricultural or dray horses, will be properly arranged under the descriptions of Clydesdale, Suffolk Punch, and the old English draught horse of Lincolnshire. Under these heads will be discussed the adaptation of each class to the purposes intended to be served by them.

Without entering upon a repetition of old stories or useless details,

it is enough to observe that the English race-horse is an Arab, enlarged in size by two centuries of careful selection in breeding, choosing the best shaped and largest stock in both parents, and crossing them again, so as to bring out the highest points of excellence, and following this up by a course of feeding on compact and nutritious food, aided by a temperate climate. With all these improvements, the racer of these islands still bears a considerable likeness to the Arab, of which he is undoubtedly the descendant; but he is superior to them in stature, in stride, and in speed. The racer should carry a high and lofty head, should have a small lower jaw, fine muzzle, but wide nostrils, bright and courageous eye, small ear, arched neck, convex on the upper surface, *but not presenting any curve underneath.*

It occasionally happens that the neck of the racer presents an appearance the very reverse of what we have described, and this usually in mares; this is by many, and especially among the Arabs themselves, declared to be a sign of very high blood; and is called "ewe-necked." It is possibly, however, less a sign of *blood* than a proof of the animal's progenitors having had that hereditary formation transmitted through the race — a circumstance that should, when possible, be avoided. A racer must be a *blood* horse. The meaning of this term is as follows:—The Arab is supposed to be the purest and least adulterated of breeds, and to be the most faithful representative of the original horse; the criterion of *blood* is, therefore, the being able to trace a horse's pedigree to an Asiatic progenitor. *Thorough-bred* and *blood* are synonymous terms. It does occasionally, though rarely, happen that a horse is perfectly formed, although not *thorough-bred;* when such is the case, the horse, notwithstanding his form, is usually deficient in speed, and, however excellent for other purposes, is useless as a racer; it also occasionally happens that a thorough-bred horse is defective in some of the *running points* of form. In order, therefore, to constitute a racer, we must have a combination of *blood* and *form*; an ill-formed horse cannot run, and none but a *blood* horse can race at speed to the end of a long course and live.

Captain Rous, R.N., a high authority on the matter of blood horses, says—"The English race-horse boasts of a pure descent from the Arabian, and under whatever denomination the original stock of our thorough-bred horses have been imported—viz., as Turks, Barbs, or Royal mares—there can be no doubt they were selected by the patrons of the turf, and by their agents, during the reigns of James I. and the two Charles's, and James II. and the Commonwealth; and whether

they were brought from Barbary, Turkey, or the Continent of Europe, they were considered as the true sons and daughters of the desert."

Now, though it is perfectly true that we trace every race-horse of acknowledged power and speed back through the stud-book to an Arabian ancestor on one side, it does not by any means follow that they were not all more or less crossed by the native English horse, of some quality or other. The produce of the first stallion, the Markham Arabian, must have been so, for the next importation of mares could not be served by any pure Arabian stallion; the Markham could not then have been living, and we know of no intermediate importation. Hence, though there may only have been one cross of the native blood, and that carried back again to the Arab, it is impossible to say that the acclimatized constitution of the native sire or dam did not add to the blood, the bottom, the fleetness, and density of bone of the Arabian, resulting in a horse of greater power, and even greater speed, than the Arabian itself.

Much controversy has taken place, to prove that the English race-horse has exceeded the Arab, his progenitor, in speed and power. It is alleged that either the British climate, or more attention to breeding, has produced this improvement. It by no means follows that either is the case; the Arab may have degenerated,—for it is difficult to believe that the practice of the Bedouins would long keep up the high breeding of the animals. It may possibly be easier, also, to raise a breed from a great variety, by careful selection, feeding, and training, than it is to keep a once pure breed free from defects. Captain Rous, the writer to whom we before referred, says, that so far from our climate being especially favourable to the development of the Arabian, it is just the reverse. The pasture, he argues, and the extreme care and attention in breeding from the best parents, on both sides, is the cause of our superiority; it being generally admitted by the most experienced men of the turf that a first-class English race-horse would give six stones to the best Arabian which can be found, for any distance under six miles. The only instance, however, in which this has been fairly tried, was in 1828, when a match was made at Calcutta between the English horse Recruit, carrying 10 stone 8 lb., and the best Arab at that time in India, Pyramus, carrying 8 stone 3 lb., two miles. Recruit had been a very short time in India, and had tender feet, which disabled him from taking strong work, notwithstanding which he won in a trot! On the other hand, the Pacha of Egypt has, during the last year, challenged the English turf to race with their best stock on the plains of Egypt, against a native horse—a challenge which was declined.

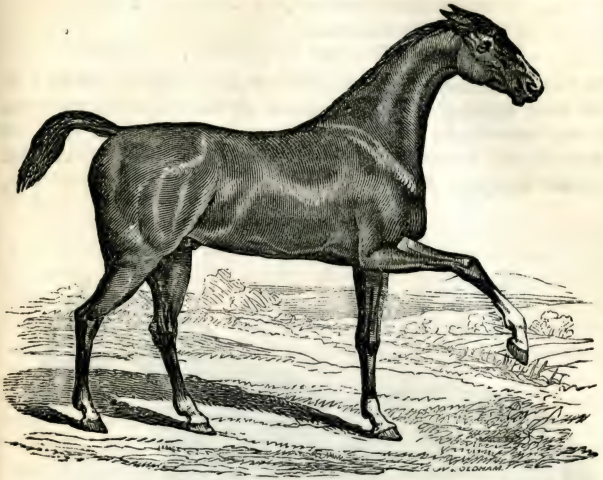
In support of this argument, it has been declared to be an established fact that no first or second cross from an imported Arabian, with the exception of one mare's produce—the Wellesley Arabian—is good enough to run for a fifty-pound plate at the present day; whereas, in 1740, our best horses were all second and third crosses from the original stock. The most distinguished primogenitors of the English race-horse are the Byerley Turk, the Darley Arabian, Curven's Bay Barb, and the Godolphin Arabian; there having been no horse of any eminence in England, during the last two centuries, which has not inherited their blood. Of the first two named we know very little, only that they were sires of Basto and Flying Childers; but the blood of the Godolphin Arabian is in every great stable in the kingdom. He is described as having been a thick-necked, heavy-shouldered, over-topped horse, without apparently a single point adapted to racing qualities. Now, though he might be an exception to the rule, still the early crosses with the Arabian, as has been satisfactorily shown by the anonymous Harry Hieover, were by no means celebrated for following their Eastern sires in the leading points of beauty. Eclipse had, says this lively writer, by no means a beautiful head. Dick Andrews, as good a horse as ever ran, had a very large head. One of the most celebrated stallions and racers of late years, Touchstone, had not a fine head. Cymba he describes as having had a head more fitted for collar work than for racing. Mendicant had a very large head; while that of Van Tromp he describes as really ugly, "added to not the handsomest body in the world; and that truly capital and honest horse, St. Lawrence, had a head showing less breeding than I should wish in the head of a hunter."

Some writers contend that there is great degeneracy in the English racer of the present day. Hookham makes out a strong case on this point; he states them to have lost vigour and stoutness, and that the pursuit of the single object, speed, has effected this change. Heavy stakes, and single runs of short distances, he contends have effected this; and the result he gives as producing weakness, and disposing to coarseness. They have, he contends, flat sides, long backs, long and therefore weak limbs, and are sadly different from the short back and limbs, capacious chest, and full size, allied with constitutional vigour and stoutness, of the older horses, which have all been sacrificed to get an addition to the stroke. Captain Rous contends, on the other hand, that "the form of the best race-horse in 1750 is inferior to that of a commonest plater of the present day." He has, we believe, overrated the capacities of the modern racer, and underrated those of the period a

century back. Those who are fond of asserting that our horses are degenerating in excellence, and, in proof, recapitulate the performances of some of our coursers of former days are also in error. It would, probably be more correct to say that our horses have so much progressed in excellence, that feats once deemed extraordinary are now regarded as commonplace, and scarcely talked of. Thorough-bred horses are now, in consequence of the great general improvement, more equal in point of speed, and fewer *individual performances* occur to excite wonder. On one point, however, before leaving the subject of the racer, I would take this opportunity of expressing my unqualified opinion,—that the abominable practice of running horses at too early an age, which is at present fast creeping into fashion, is but too certain to produce early foundering and rapid degeneracy of stock. I would also suggest that the evil resulting from a passion for mere speed is the proper punishment for the immoral spirit of the race-course,—a field fruitful for the practised sharper, tending to sow laxity of morals and a gambling spirit among the lower orders; while the better portions of the upper classes are almost entirely forsaking races, the cheap trains are increasing by thousands the attendance of the people, and the distress occasioned in families by the results of the race-course is often as heart-rending as it is incalculable. The low betting-houses are becoming the moral pests of society.

It is not, perhaps, generally known that the common expresion applied by jockeys to a well-formed horse which cannot race, "he wants *heart*," is literally and anatomically true. The heart of a racer must be *large*, and the cavity of the chest capacious. The lungs also must be large, and play freely. The heart of Eclipse, who, next to Flying Childers (whose portrait we annex), was the fastest horse that ever ran, was of a singularly large size, weighing upwards of fourteen pounds. The expression "broke his heart" is also, in many cases, literally correct, that viscus being not unfrequently burst or ruptured when the poor animal is pushed to over and undue exertion. To return, however:—The neck must be gracefully set on, and the shoulder must be lengthened, oblique, and lie well back; a lofty forequarter denotes relationship to the Barb, that race being remarkable for presenting this feature. The Godolphin Barb, indeed (sometimes erroneously called the Arabian), possessed this feature to such an extraordinary degree that the truth of his portrait has been questioned. That which we have extant, however, is from a picture originally taken by a French artist, and copied by the celebrated Stubbs, of which our engraviug at page 35 is a no less faithful copy. The quarters

should be ample and muscular; the fore-legs straight and fine, but with sufficient bone; the hinder legs well bent, and the pasterns long and



FLYING CHILDERS.

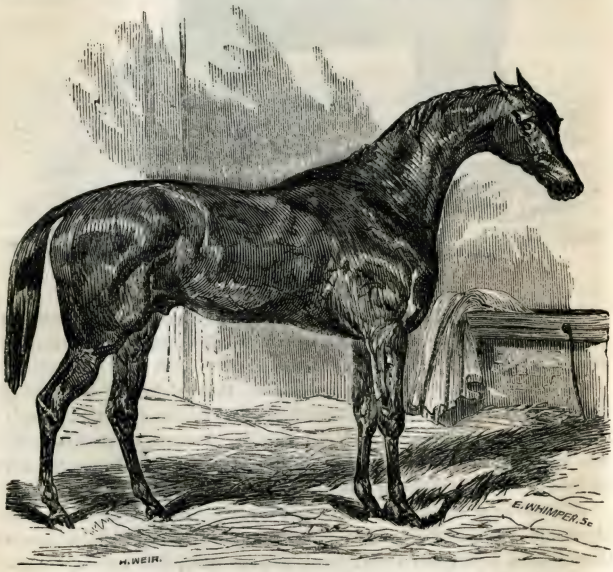
springy. Much strength in little compass, provided that compass is not too little to admit of adequate stretch, or *stride*, constitutes the *acmè* of perfection in a racer.

We have selected Flying Dutchman, the celebrated winner of the Derby for 1849, as a good specimen of the blood of the present day. This horse was bred by the late Mr. Vansittart, in 1846; he was by Bay Middleton, out of Barbelle, her grand-dam being Selima, by Selim. Bay Middleton was also got by Selim.

The Flying Dutchman is a dark-brown horse, with no white about him beyond the saddle mark; he stands about fifteen hands three inches high; has a lean head, Roman nose, full fiery eye, prominent forehead, and ears carried a little back. He has a strong neck, a little bowed; fine deep shoulders; measures five feet six inches in girth, round barrel; powerful back, rising a little on the rump; strong quarters, well let down; light thin tail; good thighs; immense arms; and very large bone. He stands a little over at the knee, but is altogether a magnificent specimen of the power of a race-horse. Flying Dutchman started five times in 1848, and won—

The July Newmarket Stakes . .	£1110
A Sweepstake at Newmarket . .	£600
A Sweepstake at Liverpool . . .	£1200
The Doncaster Champagne Stakes .	£825
The Doncaster Two-year Old Stakes .	£560

In 1849 he started, winning the Derby Stakes, at Epsom, £6320. At the Ascot meeting of 1850 he carried off the Emperor's Cup; but it was reserved for the spring meeting, at York, which came off May 13, 1851, to test his powers. On this occasion he was matched against Voltigeur, a horse in every respect a fair match for him,



FLYING DUTCHMAN.

for one thousand guineas. The race caused great excitement on the turf, and betting was in favour of Voltigeur. At starting, the latter took the lead by three lengths, and kept it over the greater part of the course, but towards the end he drew up, and finally won easily by a length. The race was run in three minutes thirty-three seconds,

and, at its termination, his noble owner, the Earl of Eglinton, declared his intention that he should not run again.

The British racer has long held a first place in the estimation of the equestrians of Europe. It is well known that Napoleon, when in the zenith of his power and glory, conferred an order of high military rank upon a German prince, in return for his having brought to France, in his stud, the progeny of the celebrated English horse, "Morwick Ball;" and it is not very long since the French were purchasing a considerable number of half-bred horses in England and Ireland for the use of their cavalry, and that, too, at a very high average figure, viz., from £30 to £40 a-piece.

The Hunter is another of the breeds of horses where fleetness is an essential requisite, but where power and endurance are also equally necessary. Hence all is not here, as is too much the case with the racer, sacrificed to speed. The hunter has not to gallop for a very few minutes only over a firm and level course; he has to leap over high fences and broad ditches; he has to carry not a make-weight, but sometimes a bulky rider, over soft ground and hard, and has to continue this sometimes for hours over countries as varied in their character as the game he pursues, or the hunter who bestrides him; hence, though he requires less stride than the racer, he requires more compactness—more stamina—more power. He requires a *broadness* as opposed to the racer's *length*. He requires muscle as well as bone, and he needs also the strength necessary to meet the difficulties of the various strains on his sinews and his muscles. He must have slanting shoulders, and well-bent hocks, powerful arms, all round, and broad feet. He must have a small head and wide nostrils, as indicative of spirit, and he must have his ribs and his hips near each other; he must be well ribbed home.

He is usually better than half-bred—that is, he is able to trace his blood on one side to the pure Arabian; but the most favourite hunters are beginning to carry a better share of pure blood than even this. Harry Hieover, a great authority on horse flesh of all kinds, takes the ground that the hunter, to be a good sound horse—trusty, and well-bottomed—requires even more pure blood than the racer himself.

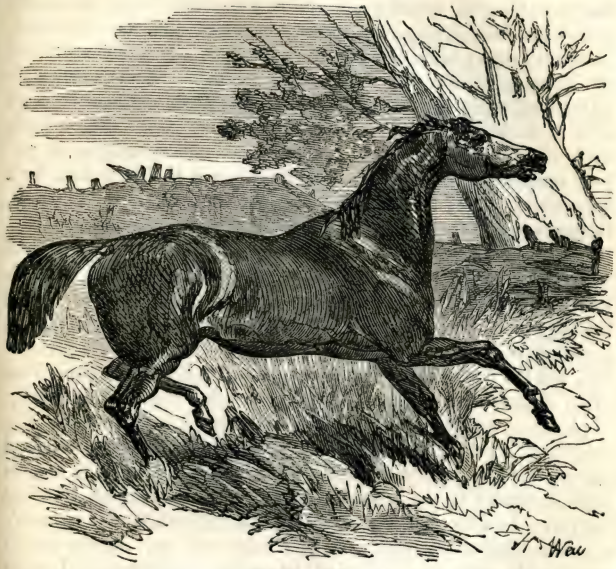
He says:—"It was formerly supposed that thorough-bred horses were unfit for hunting,—jumping, as our ancestors did, to the conclusion, that they would not go through the dirt, or live with hounds, in a heavy country. Later periods have proved the fallacy of such conclusions, and we find that in deep ground and difficulty, it is *blood*

that tells. That it does away with the actual racing speed of the race-horse while in such ground is a matter of course; but the quantum of speed he can use in such impediments makes the lower bred one sigh at his plebeian origin. If the race-horse can go in heavy loam or clay, why not in sand?" The celebrated Nimrod was of the same opinion with Harry Hieover. After describing the hunter of last century with due praise, he adds, "all these accomplishments, however, would never have enabled a horse of this description to carry the modern sportsman, who rides well up to hounds on a good scenting day over one of our best hunting countries. His strength would be exhausted before he had gone ten minutes, by the increased pace at which he would now be called upon to travel." For, as this celebrated writer goes on to explain, the dogs, as well as the horses, have now a dash of blood, which gives accelerated speed to the chase, and requires a good mount indeed to see the end of it.

Steeple-chasing, which came into fashion about forty years ago, and which has been kept up with much spirit ever since, has also increased the necessity of having nearly thorough-bred horses trained as hunters. We select, as a specimen of this class, Old Lottery, one of the best horses of his day:—"Barring water jumping, at which," says a writer in the *Sporting Magazine*, "he was a sad sloven, a more perfect hunter never existed, and the style in which he beat 'seventy-four' at Leamington, stamped him a horse of undeniable speed." The same writer, Colonel Chasse, says, "The last thing we heard of Old Lottery was, that he had fallen into the hands of a gentleman who used him for short rides over the farm, but never putting him to a fence, as such exertion made him pass blood."

The hunter, therefore, in a country like this, abounding with hedges, stone walls, and heavy-ploughed lands, should be bred with a view to greater power than is requisite in the racer, and *length of stride* is, therefore, less essential to his form than *barrel*. Let his *legs* and *pasterns* be rather *short* than otherwise; an Arabian would speedily founder in a run with hounds across one of the most level of our British counties. *Clumsiness* is not, however, a necessary concomitant of power. The hunter should have as much *strength* as possible, without *weight;* sufficient courage, without wild, tameless fire; good wind, capacious lungs, a free gallop, but, at the same time, a light and nimble, and a free, easy, *sweet* trot; and let him be *six years* old before he is ridden to hounds. A horse may be advantageously used in the *harrow* and other light *draught* when rising *four*, and may thus be made to "pay his keep." Many recommend putting a hunter in the *plough*

a day or two in each week, under certain conditions—viz., that the land be not *heavy*, and the plough be a light one; if these conditions



OLD LOTTERY.

be not attended to, the horse is apt to acquire an ugly carriage, and a habit of *poking* with his head—faults which, however lightly they may be regarded at first, will prove serious inconveniences, when they cause the hunter to fall headlong in full career, from the habit he acquires of being unable to use his eyesight when his head is kept up and in hand. This custom of working young hunters,—indeed to a great extent *old ones* also, prevails much. There are few farmers, or small landowners, who do not strive to keep at least one *blood horse*, and in many instances the finances are too low, or prudence is too great, to admit of such being kept as mere idlers; the practice of accustoming such horses to draught, however, should be cautiously adopted.

Much controversy has arisen relative to the advantages or disadvantages of what is called summering the hunter. In our opinion, nothing so tends to renovate his powers as turning the poor horse out to grass in summer. The opponents of this system argue that doing

so destroys the animal's condition, and gives his owner a world of trouble to get him in order for the ensuing season; even admitting this to be the case, would you keep the poor wretch that has served you so faithfully during your winter's chase, standing in a hot stable during the sultry heats of summer, and only to save a little trouble? Oh, but some hunt during the summer months! Shame upon such selfish men—men unworthy of the name of British sportsmen; cruel alike to the animals whose service they employ in the chase—those noble creatures the horse and the dog—and unnecessarily so to the poor animals they hunt, whose breeding season it is. These men, for a very short period of doubtful pleasure, injure their horses, their hounds, themselves, and also mar the legitimate sport of the coming season.

There is nothing like summering for renovating the hoof; and with a view to this, a soft yet not a boggy pasture should be selected, and if within reach of salt marshes all the better,—the salt has a healing influence on the hoof. The grass growing on a boggy soil is, however, unhealthy, the vapours and steam arising from it prejudicial, and the fly far more troublesome than in drier grounds. This mode of treatment has another advantage: it obviates the necessity of physic, of which the less a horse has given him the better. The celebrated Beckford was a strenuous advocate of this system, as indeed he was of every system connected with rural sports tending to promote humanity to the animal. As a further inducement to adopt his views, he adds, that "your horses will require less of the groom's exercise afterwards; which, if you value an easy mouth, and a comfortable seat, you will find no mean desideratum. I must qualify this opinion of mine, however, by adding that Nimrod, Hieover, and some of the best modern authorities, are opposed to it. Nimrod states that the advantage of the new system of preparing hunters for the field is so obvious, that the old one of turning him out to grass in the summer is not adopted in the best stables." He adds many other arguments in support of his own views, all deserving great weight, coming from such an authority.

Hunters must be fed according to their work. When that is hard, let them have plenty—when otherwise, diminish the food, especially the hay. Beckford judiciously recommends a little clean wheat-straw to be chopped small, and mixed with their corn; "if," says he, "you have interest enough with your groom to prevail on him to give it to them." Our advice is, if you have doubts of your groom obeying your orders, see to it in person. The eye of the master makes a fat horse.

When your horses require physic, if at grass, take them home the

first night after each dose; such as require powerful medicine should be physicked in the stable. Nitre is a useful medicine; it is very cooling, and otherwise salutary in its effects, as an alterative; it may be given in doses of an ounce to each horse, either in water, or among the corn. Carrots are excellent for horses when at all thick in the wind, foul in the coat, or low in flesh; but they should not be given in the corn, as some writers recommend, for the horses are apt afterwards to refuse it unmixed.

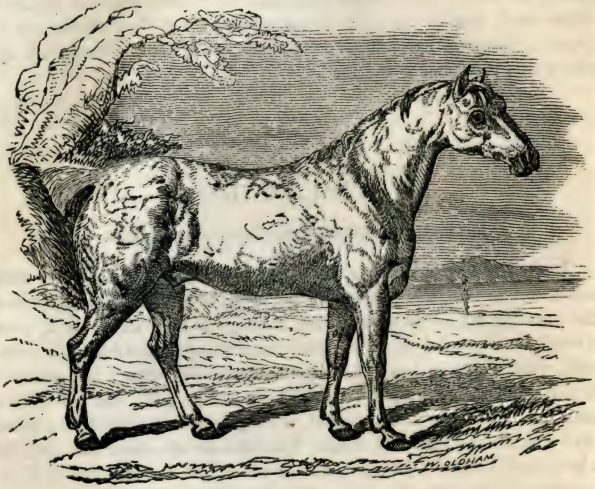
CHAPTER VI.

BREEDS COMBINING STRENGTH WITH SPEED.

If the hunter must have the speed of the racer,—combined with power and bottom, to enable the lover of sport to pursue with fleetness the cunning fox or the timid hare, through a long day's work, over a rough and unequal country—the Hackney or Roadster must combine, with a certain amount of speed, the power which is necessary to carry a heavier weight for a still longer period. He must have bone enough to carry his weight, with great compactness; he must have muscle and sinew to enable him to bear up under his load for a long period without fatigue; and he must have action, so as to allow the rider to sit easy; for while the sole action of the racer is stride and energy, and that of the hunter is the two combined with muscle and stamina, the roadster, travelling usually on hard roads and at all paces, must have *action* of a very superior order to either of the other. The action of the race-horse in his gallop is one to which his rider will soon accustom himself, and that of the hunter is less felt in the inequalities of a country—in the excitement of the leap and a hotly-followed chase; but that of the roadster must be sweet and pleasant—no propping, hobbling unsteadiness, but a gentle, easy, spring-like motion, arising from slanting of the shoulder, lifting of the leg, and elasticity of the tendons and muscles of the arms. Hence, though they appear stiff to the observer, they have action as easy in reality as if the rider were seated in a carriage made with artificial springs.

In form, the hackney should be still more compact than the hunter, with more substance in proportion to his height; his forehand should be light, but high; his head small, and placed in a tapering manner on his neck; shoulders deep and spacious, and lying

well back; back straight; loins strong; fillets wide, and withers well raised; nor must the croup droop too suddenly, or the tail be set on too low. The forearm should be particularly strong and muscular; the legs should be straight, and set well together; the feet should point



THE HACKNEY OR ROADSTER.

directly forward, (bad shoeing, however, which may be remedied, frequently occasions the reverse of this): above all things see that the knees do not bend; and avoid the horse that *stands over* them; he does sometimes turn out well, but you can never depend upon him, never knowing when he may come down. The hind legs should be placed well back, and should stand wide apart; observe his action, that he lift not his feet too high, for, however the novice may conceive such a practice to be a safeguard against stumbling, or to have a showy appearance, it is certain to produce a most uneasy seat, as well as to occasion very unnecessary wear and tear of the hoof. Take care, at the same time, that he lift not his feet in a slovenly manner, or too low; and that, above all, his feet are returned flat to the ground; if the toe first comes down, the animal is sure to prove a stumbler. Always *feel* your horse's mouth, even when travelling the smoothest road: this is a good *habit*, and may frequently save him his knees and you a fall.

In Ireland, the hackneys, or ordinary riding-horses, exhibit no inconsiderable amount of thorough blood, a circumstance which derives its origin from the fact, already adverted to, of farmers and country gentlemen keeping brood-mares in work, and putting them, when in season, to whatever blood horse is standing in the neighbourhood, at a moderate charge. Too high breeding is objectionable in a roadster, as tending to impart a straight-kneed, upright action, calculated extremely well for racing, but very ill-adapted for the road.

In speaking of the hackney, or ordinary riding horse, it would be wrong to omit saying a few words of the horse generally used as a WAR-STEED OR CHARGER.

The art of war has materially changed since the Norman horse was introduced into this island, and by his superior power and weight overcame the lighter mounted native cavalry. The bogs and forests required power and strength to go through them, and so long as the art of war depended on hand to hand combat, power was everything. Hence, the powerful Norman horse overmatched the less heavy and enduring charger; but now that the face of the country is changed by cultivation and civilization, it is questionable if a fleeter horse does not much more fully answer the purpose. Napoleon, moreover, finished what the discovery of gunpowder began, and established a system of warfare the entire tactics of which depended on the *rapidity of its movements*. Here a lighter horse with more action was required, and the whole cavalry of Europe has gradually merged into the light, active, and hardy charger of the present day.

Endurance, however, is equally necessary as a qualification for the war-horse, and this can hardly be got but by a dash of Arabian blood; hence the contractors of horses for the army are required to look to the compactness and spirit of the horses they are commissioned to purchase both for the British and continental armies.

The light cavalry are now mounted on half-bred horses, possessing much of the character of the hunter, and indeed some present no inconsiderable appearance of blood. Formerly, all our cavalry were mounted on great, heavy animals, partaking closely of Flanders stock; but it is now found that lighter and more active horses prove far more effective in the field, and that rapidity of evolution was a greater desideratum than mere physical weight or strength. What is known as a "weight-carrying hunter" is about the best description of horse for a charger. The horses of the artillery display less appearance of blood than the ordinary charger, and when *cast*, as it is called, are well

worthy the attention of agriculturists, as they are docile and willing, and make excellent servants either for the cart or plough.

Trotting Horses.—The most celebrated trotting horses of this country have been bred and reared in the counties of Suffolk and Norfolk. The traffic between these counties and the metropolis,

THE TROTTING HORSE SILVERTAIL.

chiefly in supplying food for its increasing population, led to the early employment of vans, which were required to travel at an accelerated speed. To horse these vehicles the fastest animals in the respective counties were selected, and from one of this class, known as Marsh-land Shales, most of the trotting horses are descended. The most remarkable of these was the mare Phenomenon. This mare, the property of Sir Edward Astley, trotted seventeen miles in fifty-six minutes; a month afterwards she went the same distance in less than fifty-three minutes, going a four mile course of that distance in eleven minutes,—as nearly as may be twenty-one miles and three-quarters in the hour. After many vicissitudes this wonderful

animal seems to have fallen into humane hands, having become the property of the late Sir R. C. Daniel, by whom she was properly cared for. The performances of this extraordinary mare have never been surpassed.

In 1822 a match was made between Captain Overton's horse and Mr. Bernard's mare, near Gerrard's Cross, for four hundred guineas, which was easily won, by the mare performing the distance in twenty-seven minutes and forty-six seconds. The horse went the distance in two seconds more, very nearly nineteen miles and a half in the hour.

The Americans have produced some very extraordinary trotting horses. Of these perhaps the most remarkable was Tom Thumb, formerly possessed by Mr. Osbaldiston. He was matched to trot a hundred miles in ten hours and a half, and accomplished his task twenty-three minutes under the time, and did not throughout exhibit the slightest signs of distress. The stoppages on the road occupied thirty-seven minutes of this time. An English bred mare was afterwards matched to perform the same feat, which she accomplished in ten hours fourteen minutes, of which time thirteen minutes were occupied in stoppages. She suffered no inconvenience; but it is gratifying to know that her owner had given instructions to the driver to stop at once if she showed symptoms of distress.

Many other trotting horses have occupied the attention both of this country and America during the last few years. None perhaps more than the horse Confidence, well known in the neighbourhood of London, eight years ago. This was a very handsome bright bay horse, rather under fifteen hands, with black points and handsome tail, and well developed form. Such, however, has not always been the appearance of trotting horses; while writing, a scene occurs to us in which the performer presented a very different appearance. On a fine summer afternoon, some eight or nine years ago, and near to Epping Forrest, might be seen a smart four-wheeled phæton, going along the road at the rate of ten miles an hour; the driver passed a market cart, of a very ordinary appearance, occupied by a stout, ordinary-looking man, drawn by a still more ordinary-looking black horse, about fourteen and a half hands. The phæton had left the cart a hundred yards or so behind, and the driver thought he had parted company with it; but while the thought was passing, the cart whirled past and shot far ahead of him. Here it lingered, it again fell behind, and again performed the same part, in spite of the efforts of as willing a horse as ever was put in harness. The

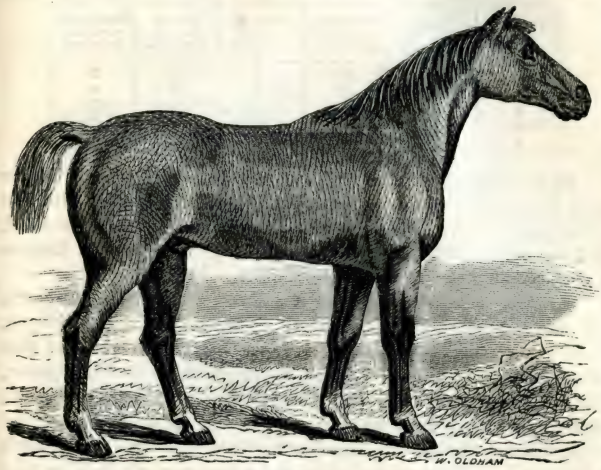
driver's attention was drawn to the action of this horse, and had he not witnessed this scene, it is certain that the truth of Mr. Weir's representation of Silvertail would have been doubted; the feet of the animal, when his powers were put forth, seemed to skim the ground without touching it, and we cannot doubt but that he was performing his eighteen or twenty miles an hour. The owner of the horse was ready to back him to any extent, and for any distance. The driver of the phaeton was satisfied by finding it was no ordinary animal which had so defeated his own favourite, and proceeded on his way.

Silvertail was another of these extraordinary horses: he was not discovered to be a trotter till past his tenth year, when, a person riding him, got angry with him, and beat him severely, which had only the effect of making him trot faster, instead of breaking into a gallop. On making this discovery several matches made were won by him, and he was sold for £100. He was afterwards sold for much less; then he increased in value. But his owners and matches were so numerous that we cannot here enumerate them: he trotted sixteen miles and a-half in the hour when twenty-eight years old. In colour he was a rich cream-colour, with white flowing tail and main. When trotting he had very high action and carried himself well.

Some hackneys are also famous for their power of walking—a most invaluable quality where it exists in a high degree. The most valuable of the Australian horses are remarkable for this quality, and prized accordingly; for, while in that country any horse serves for the chase and ordinary riding in the bush, the journey horse is highly valued. It is no uncommon thing for one of these horses to walk a hundred and fifty miles in three days, travelling ten hours a-day, and continuing that performance unceasingly for many days. Indeed, Australia seems destined to become a great breeding country for the horse. Its extensive plains, and the purity and dryness of its atmosphere, admirably adapt it to the constitution of the horse. And the anglo-Saxon race, true to their characteristic, have already established races in nearly every village in the three colonies, where every encouragement is given to breeding.

The Carriage Horse.—The first use of the horse, after his subjugation and domestication, was undoubtedly that of carrying his rider on his back. This would be suggested by his having four legs and a back suited to carry a burden, and, above all, fitted to be bestrode by his master, man. But soon his power of *drawing* a burden after him would also be obvious, the fitness of his shoulder for this

purpose, would very speedily manifest itself. Hence he would draw first perhaps the sledge, then the wheeled carriage,—both for the purpose of transporting his master from one locality to another, and also for transporting his food and his conveniences in any direction which might be necessary. For these purposes he required power for



CARRIAGE HORSE.

the heavy weight, and speed for the lighter. The ratio between speed and power, so easily reduced to a graduated scale in the inanimate steam-engine, is equally applicable to animal power;—mean capabilities being taken into consideration in both cases equally. The ultimate power of a horse depends on the amount of weight he can draw in a given time.

Thus, taking an average horse to be able to draw one hundred and sixty pounds, his pace would be two miles per hour. There is a great mistake generally prevalent as to the force of traction a horse possesses. Take a plough as a criterion; the lightest two horse plough draws equal to one hundred weight, or 112 lbs. per horse, and he walks at the rate of three miles per hour, for ten hours a-day; while the heaviest plough in which two horses are put will take fifty per cent. more force of traction, or say one hundred weight and a half per horse. The carriage, however, rolling on wheels, differs altogether from the

plough, and requires a different sort of animal. The horse requires less *power*, and consequently is calculated to travel at a greater *speed*, and with a much less weight. An attempt has been made by Stewart to construct a ratio of speed and power, and it is very interesting to trace such an adjustment.

Pace, in miles, per hour.	Power exerted, in pounds.	Duration of exertion, in hours.	Pace, in miles, per hour.	Power exerted, in pounds.	Duration of exertion, in hours.
2	112	10	7	32	5
3	74·6	9	8	28	4
4	56	8	9	24·8	3
5	44·8	7	10	22·1	2
6	37·3	6	11	20·36	1

As an illustration of the nature of the different kinds of work, he gives the instance of the Glasgow and Edinburgh waggons, with four wheels, when an average speed of two miles per hour was travelled, and a weight conveyed of three tons, including carriage, and a distance was travelled of twenty-two miles per day.

Whereas, taking the Glasgow and Edinburgh night mail coach, ten miles per hour were travelled, an average weight conveyed, including carriage, of one ton and fifteen hundred weight, and nine miles per day were travelled over. There can be no doubt, however, that the waggon horse would live many a long year, under such work, after the poor coach horse was whipped to death. An anonymous writer in the *Sporting Review*, thus describes the characteristics of the old coach horse—an animal fast disappearing, and a specimen of which we may soon expect to see, stuffed, in the British Museum as a curiosity:—"He should have a well set on head, good shoulder (though it is not necessary it should be so well up as for a hack), and, if it is rather loaded, it is no objection for a draught horse, good loins, sides well ribbed up, strong thighs and well spread gaskins, flat legs, and good sound feet. Very high action in the coach horse is not to be desired, as both its legs will wear out the sooner; it is of greater importance that the foot be put down flat and well, and that the toes are not dug into the ground. If a horse puts his foot on the ground as he should, he will never stumble."

The best and most showy carriage horses are those descended from Norman blood. Those in ordinary use are now bred with so much blood as to present very little difference of appearance from the hunter. The best carriage horses that could be bred would be produced by crossing a handsome draught-mare with a thorough-bred horse, provided the latter was possessed of sufficient bone and height,

and the mare of symmetry. The best description of draught mare that could, perhaps, be selected for this purpose, is that called the CLEVE-

THE CLEVELAND BAY.

LAND BAY, a clean-made but powerful animal, and one which was formerly much in use to mount our cavalry.

It is not an easy task to find a good description of the Cleveland Bay, a horse fit in itself for all sorts of work—that is to say, combining more of all qualities, draught, speed, and power, than perhaps any horse we could name; and yet possessing none of these in too high a degree. There are few races of horses which a cross with the Cleveland will not improve in making it fit for all work. Strong as is the clay of the Vale of Cleveland, still the horse is light, clean-legged, and compact,—good in bone, and excelling both in speed and in action;—will draw the cart or plough with cheerfulness and facility—will take his master to fair or market with pleasant action if not with spirit—will pull gallantly, if not at high speed, his dog-cart or his gig—nay, will on a pinch carry him after the harriers, or even the fox-

hounds, over a heavy country;—and, though she can neither fence nor gallop so well or so fast as some, she will carry him fairly through a long hard day; it must be confessed, however, that she is here more out of her element, than, perhaps, in any other service. In herself she is neither a roadster, a coacher, nor a hunter; but give her a cross of blood and her progeny is fit for any thing. An excellent drudge of all work; she may be made useful in her way for all, by judicious crossing. Hence the pure bred Clevelands are fast dying out, and it is hardly possible to obtain them without some alloy. The farmer, who uses draught horses, finding his clay much more tenacious, since it was taken out of grass in the war-time, crosses his Clevelands with a draught horse of the heavy old English kind, and a mongrel, sluggish, draught horse is the result. The more ambitious breeders cross with a coach-horse, and a larger and more powerful animal is obtained; while others cross with full blood, and get either a carriage horse or a hunter. But they spoil the true breed. The Cleveland is nearly always *bay* in colour. He is round and short, well ribbed home: small head and small neck, round barrel, full chest, good quarters, muscular legs, and a form generally expressing compactness.

CHAPTER VII.

BREEDS CELEBRATED FOR STRENGTH.

WHATEVER share the fleet sons of the desert may have in our rural sports, or whatever share they may be supposed to add to man's safety, there is no other race of horses so utterly indispensable to man as the draught horse. He is the substratum of all animal power. He tills the land, he carts the produce in its raw and manufactured state, he is the precise link between civilization and barbarism; nay, without him it is impossible to conceive a state of very high civilization at all. There are three prevailing breeds in Great Britain, which are each of them valuable in their way and for their locality,—the Clydesdale or large Scotch horse, the smaller but not less broadly developed Suffolk Punch, and the medium between he two, the old English draught horse, the parent of the dray horses in London.

The present breeds of draught horses in England are remarkable for their gigantic size, vast power, and slow, deliberate motion. The

most esteemed Scottish horse is the Clydesdale; for that breed, although of large size, possesses greater suppleness of limb and more activity than the heavy Flemish. He is not unfrequently sixteen to as much as sixteen and a half hands high. Power more than beauty, however, is their prevailing characteristic. They have often large heads, ill-defined jaws, and round sour-looking muzzles. They are sometimes somewhat flat in their sides and plain and low in their quarters. Still they are the most powerful and enduring horse known for the plough and the cart. The neck is long and so are the legs, but the barrel is light; the temper tractable and docile, and he is always found a willing slave. Though very large in size they have not any clumsy appearance, owing to the long clean legs on which they stand; and, though heavy, they get nimbly over the ground, owing to their very large stride and their good action. Still they eat a large amount of food, and are not by any means the cheapest kind of horses for the farmer. Indeed, the good farmers of Scotland confess that their horse-keep exceeds that of England—unwilling as they are to allow any advantage in management to the English farmer over their boasted farm management.

The English Cart Horse, bred chiefly in the midland counties, is a very powerful animal, and used for agricultural purposes; but the most powerful specimens are sent to the large towns as dray horses. The colour is generally black. The whole form is so constructed as to possess great power, and the gentle willing obedient nature of the animal renders him one of the most valuable slaves of man. The head of the cart horse is not always thick and chubby; it is often on the contrary finely formed, the neck arched, the shoulders thick, the breast very deep, broad and capacious; the shoulder but slightly slanting, the legs, especially the fore ones, very muscular, the back a little slack, arising from high feeding; great rotundity of form and well ribbed in: short fetlocks and round hoofs complete the picture of one of the most noble and massive animals—combining with his amazing strength the gentleness and docility of a pet, so that an infant might drive him. The peculiar click of the tongue by his owner will set him to draw a couple of tons weight cheerfully, while he is instantly obedient to the carter's "woh;"—an "aw" turns him round to the left—while a "gee" possesses the same power in turning him to the right; and he possesses endurance, and patience, and affection, which renders him even intelligent. Happy ploughman! whistling your merry tune, the horses gallantly tossing their heads in delight; you live in light, and air, and freedom, and glow under the radiance of the canopy of heaven.

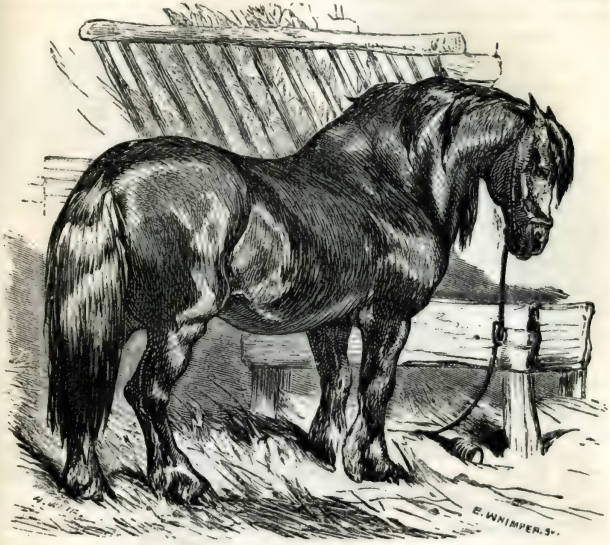
The engraving below is from a very perfect animal, which took a prize at a large agricultural meeting, beating thirteen; he was bred by the

MILBURN'S BLACK HORSE, FARMER.

editor of this treatise. This portrait was taken by the Daguerreotype process; but the engraver has failed to convey all the spirit of the living animal.

The brewers of London have been long celebrated for their enormous horses; and the utility of their prodigious size has been often thoughtlessly questioned. *Thoughtlessly*, because their bulk is absolutely necessary to enable them to endure uninjured the shocks they experience in drawing their heavy loads over a rugged London pavement. M. Huzard and M. Desmarests assert that these great horses are of the Boulogne race of France; but Colonel Smith contradicts this assertion, and affirms, that "no French horses, save those of Norman blood, have met with consideration in England for many a century." The English draught horse was, in all probability, an animal of *gradual development*—first imported by the Saxons, and subsequently gradually improved in size and power by crossing with the Flemish horses, introduced by the followers of William of Normandy, who

obtained a large grant of land at the Conquest. Colonel Smith says that the Flemish archives contain indications of the horses of that

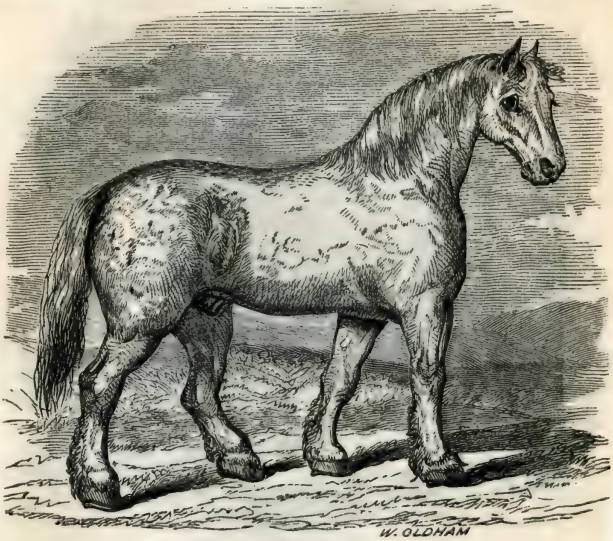


THE DRAY HORSE.

country having been conveyed to England during the Plantaganet dynasty.

The present large horses of the London brewers are bred chiefly in Yorkshire, Lincolnshire, and Staffordshire. Some fine animals are also bred in Northamptonshire. In this last-named county was bred that stupendous animal some time since exhibited in the Egyptian Hall, London, by the late Mr. Carter. The height of the Mammoth Horse, as this great animal was appropriately styled, was twenty hands (six feet eight inches) at the withers; and to the spectator standing on a chair, and looking down upon his back, it appeared as long and capacious as a ship's barge. His weight was 25 cwt.—*a ton and a quarter!* This horse was not clumsy, but, on the contrary, he was a grand, graceful, and noble-looking creature, quite free from vice, and as playful as a lamb. He is stated to have been produced by a cross between the old Cleveland and the Flanders stocks. The Irish brewers do not emulate the prodigious horses of their frater-

nity on this side of the channel; they can, however, show good, serviceable beasts under their drays—beasts, it is true, of far less bulk



CLYDESDALE HORSE.

than the London horses, but which would, nevertheless, press these gigantic animals very closely, were a trial of strength to be instituted between them, anywhere but in the crowded streets of the metropolis.

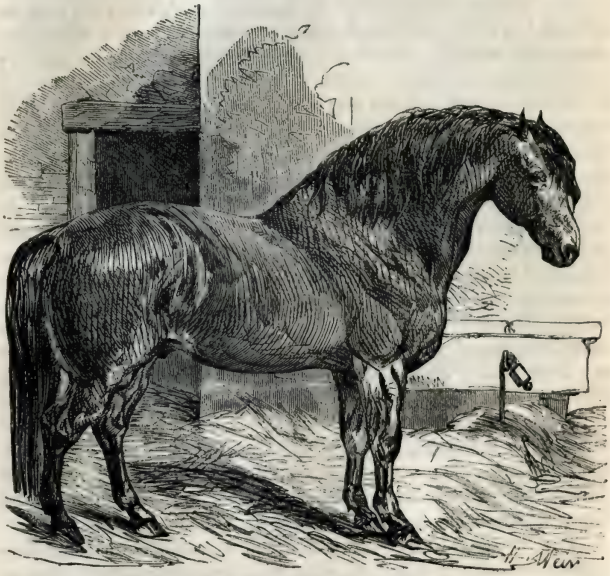
For *farm use* cart horses should not be bred too heavy, for they will be found to retain an equal proportion of power if bred with a view to a moderate share of activity. The English farmers and owners who use horse-power, are often in error in employing such large and heavy animals. This system compels them to keep a greater number than they otherwise need; and it should be recollected that every unnecessary or supernumerary horse kept upon a farm is just as much absolute loss of money as his support costs, and that cost need not necessarily consist of actual outlay; the *produce thus consumed* is to be regarded as so much money wasted. These great horses *cannot, besides, do their fair share of work;* they are too sluggish, too lethargic;

and hence agriculturists, who employ such, are obliged to work a greater number than, with proper managment, *ought to be* necessary. It seems absurd, for instance, to see, in some of the English midland counties, three enormous horses, drawing a *light plough* on *light soil*—a work that would be performed with ease by a *single horse*, or at the utmost a pair of the lighter breeds in general use in Scotland or Ireland.

The *breeders* of cart horses, or those who wish to do so, must be governed in their operations by the description of *work* for which they design the animal. If the breeder live upon a light, sandy soil, a foal out of a Clydesdale mare, by a well-bred horse, will produce a valuable animal, and one that can be worked up to six years old, by which time there will be another colt ready; the former may then be sold at a remunerative price. If he reside on a stronger soil he must breed a heavier animal; in this case if he puts a Clydesdale stallion to a mare produced by a cross, such as has been described, he will have attained this end. But the breeder should bear in mind that nothing is more unsatisfactory, or so likely to turn out an unprofitable speculation, as breeding a nondescript—a brute fit neither for the carriage nor the plough—for the saddle nor the cart; and it is, with some few exceptions, within the power of the breeder, by a judicious selection of parents, to insure a *certain* offspring. Few things are more *certain* than horse-breeding; for the rule, "like produces like," in most cases holds good from generation to generation. In rearing foals, good feeding and warm housing are absolutely necessary during the first autumn and winter. It is during the first year that they are either made or marred; if starved or stinted by neglect during that period, abandon all expectation of seeing him a good horse, whatever has been his pedigree.

The Suffolk Punch is a very useful horse for agricultural purposes; yellowish or sorrel coloured, with frequently a white *blaze* in the face, large head, wide between the ears, rather coarse muzzle, long and straight back, flat sides, low fore-hand, and shoulders rather forward, high at the hips, round legs, short pasterns, deep-bellied, and full barrel, and usually 15 or $15\frac{1}{2}$ hands high. This horse is certainly no great beauty, being deficient in several points of symmetry; he is, nevertheless, a hardy and useful horse, and capable of performing a greater amount of labour than many better-looking animals. He is also kindly disposed and a good feeder, it being no ordinary fatigue that will suffice to put him against his manger. In the foregoing description it is necessary to state that we had in our

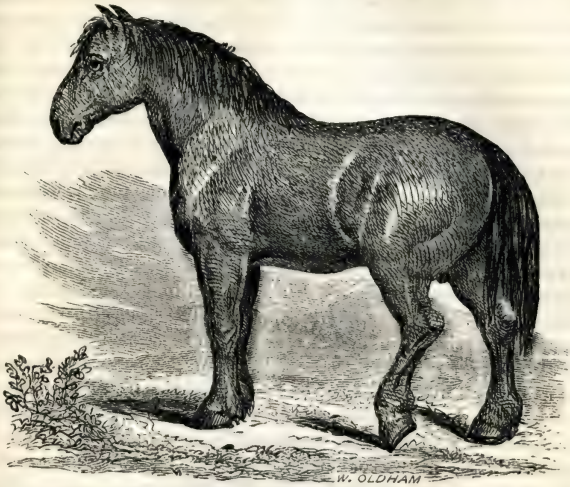
mind's eye the *original* Suffolk Punch horse, and not the modern-bred cart horse of that county, of which the annexed cut is a representation. The horse from which our drawing is taken was exhibited at a late Agricultural Show at Northampton. The old Suffolk Punch was remarkable for the willingness and perseverance with which he would pull against a dead weight, even when he felt it could not be moved by his strength. The present breed seem to have been produced



THE MODERN SUFFOLK PUNCH.

from a cross with the Norman stock; they stand higher, and are of lighter form. It is questionable how far they may be regarded as an improvement upon their predecessors. The old Punch breed brought very high prices: mares with foals at foot have gone as high as 150 guineas; and 100 guineas was not a very extraordinary price for a stallion. The present alteration in the form and size of the Suffolk horses is to be attributed to a cross with Yorkshire half-bred stallions: the result has been a larger race and higher fore-hand breed; but it is, as has been already remarked, questionable whether the animal main-

tains the valuable qualities of energy and temper that he formerly



THE OLD SUFFOLK PUNCH.

possessed. Perhaps few horses are so generally useful for a farmer's purposes as those of Ireland. The cause of this has been already hinted at, viz., the custom of the farmers of that country to keep a mare or two, and give her a blood horse when in season; hence they have spirit and action combined with hardiness and endurance.

CHAPTER VIII.

STABLE MANAGEMENT AND VENTILATION.

One of the most important matters in the management of horses is having a properly constructed and well arranged stable. It has more to do with health, with capability of work, and with the progressive value of the animals, than we can well imagine at first sight. Originally the stable was unknown. The horse, as with the Arab patriarch, would either roam in the fields or inclosures, or be sheltered in the

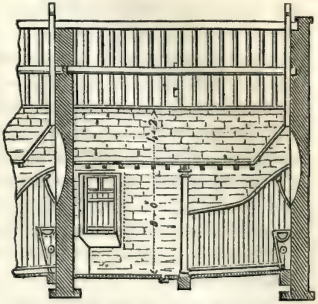
are, if not quite perfect, the most in keeping with the science of the present day, of anything we have met with, besides having obtained the favour of the Duke of Northumberland himself, a practical man and thoroughly capable of judging of the proper principles of construction.

All the walls are of stone; but this may be adopted or not, according to the circumstances of the locality. The dimensions of each stable are, eighteen feet long, twelve feet six inches wide, and nine feet seven inches high. Each stable is two-stalled—an excellent arrangement, for while each horse has company, he is not liable to the great variations of temperature necessarily arising from the constant influx and efflux of a stud of horses into one large stable, neither is he subject to annoyance and want of rest if any one of a given number be restless or indisposed. An ample, though not too great an area is given,—for something like 1078 cubic feet space is allowed for each horse. The stalls slope one inch in the yard, and are paved with stones. A channel-stone is placed behind the horses, with a slope to one end of the stable, and there a grating is placed, with an effluvia trap, for the absence of this is one great cause of several of the diseases of the visual or respiratory organs; the effluvia of the stable is usually permitted to escape, while that of the drains or tank too frequently rush back in the most uninterrupted manner. The tank is outside, and the water conveyed to it by glazed earthenware pipes. The gangway behind the horses is flagged and grooved transversely, but still sloped to the channelled stone.

The mangers are thirty inches long, twelve inches deep, and twelve inches wide, and constructed either of iron or slate. The racks are iron, put closely together, and leave the wall at an inconsiderable angle, space being obtained by the hollowing out of the wall, to prevent the waste or spoiling of the hay. The hay-loft is above the stable, and the hay is to be put down a spout or box tube, the aperture of which closes with a slot to prevent the access of foul air to the loft or chamber. A small trap-door inside, or steps outside, is the only access permitted for the groom. The floor of the loft is grooved, with hoops inserted in the grooves, and painted or pitched below, and not underdrawn, which prevents the necessity for ceilings. The loft is five feet six inches high up to the tie beam, and ten feet six inches to the apex of the roof, and is lighted by rough plate glass, introduced into the slating. A weather-boarded door admits the hay from the outside to the loft, directly above the stable door, the stone head of the latter being the sill of the former. The door into the stable is

seven feet by three feet nine inches. The masonry of the door is chambered. The engravings represent the side elevation and longitudinal section of one stable and the gable end of another. At the

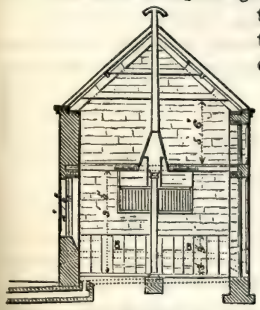
SIDE ELEVATION.



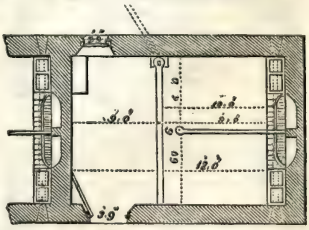
LONGITUDINAL SECTION.

right hand corner of the elevation a grating will be observed, about a foot and a half from the ground, and at a corresponding height in the section a small tube is seen under the manger: this is the perforated cast-iron pipe, afterwards described.

The next two engravings represent a transverse section, showing the ventilating-tube, which is placed over the centre, where the two stalls are divided, and a ground plan of the entire



TRANSVERSE SECTION.



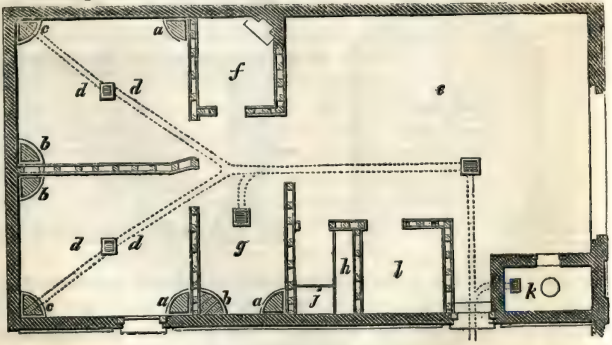
GROUND PLAN.

arrangements. Below the rack, boxes are provided to collect the hay-seeds, with openings to receive them, by putting deals in a sloping direction from under the manger. This prevents the horse from getting his head or fore legs under it. Over the horse, passing up between his head and the wall, is a ventilation-tube, for the escape of the impure air; it runs through the loft, passing off out of the roof

above, the top of the tube being turned down, to prevent down-draughts. Besides the ventilating-tube, the section shows a hollow wall, connected with the grating, through which the air is diffused and the loft ventilated. The same grating communicates with a cast-iron tube, with small holes perforated on three-fourths of its surface only; each end of this tube is bell-mouthed, and it is not perforated till the circular part commences. The openings on the outside, as we have seen, have cast-iron perforated gratings, so that the air is diffused before entering the tube, and small doors are provided, one or both of which may be closed when the wind is strong, or when, for any special reason, it may be wished they should be so. This perforated tube, coming directly opposite to the horse's nostrils, supplies him with fresh air where it is most wanted, and in such quantities only as it is required. The lights are placed *behind* the horses, and are provided for by a window glazed with rough plate glass.

The system of ventilation, and the plan of building recommended by Mr. Green, to whom we are indebted for these details, is, he contends, one which gets rid of all foul air, however closely the stables may be shut up, and in which the same atmospheric air must gradually and imperceptibly diffuse itself through the stable, not in a current—as it would do if it came from behind—but the pure air *will* and *must* reach the animal's nostrils, and it is clear that if he gets it there it will be of the most service.

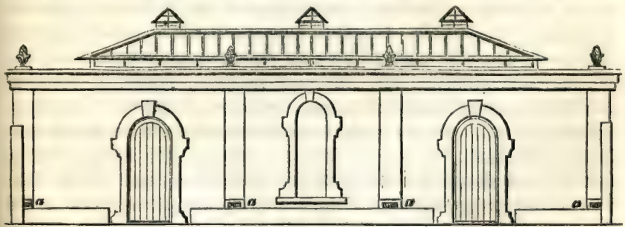
Among other efforts to improve the stable, both in ventilation and



GROUND PLAN OF STABLE.

in its adaptation to the health and comfort of its inhabitants, we may mention a building erected by Mr. Murray Anderson, at his residence,

Tollington Park, near London, and which, from its moderate size and convenient arrangements, promises to be a valuable model for imitation. We give a ground plan and elevation of this, by Mr. Anderson's assistance. This plan embraces coach-house, stabling for three horses, and stable-yard, all under one roof. The ground plan exhibits the details of Mr. Anderson's arrangement; *d d* are two loose boxes, nine feet nine inches by eleven feet six inches; *g* is a stall, five feet six inches by nine feet; *f* is a harness-room, with a stove, four feet by six; *l*, a hay-shed; *h*, the corn-bin; *j*, a bin for beans; *e*, a covered yard, under which carriages may be cleaned and horses groomed in wet and frosty weather; *k*, the dung-pit. Mr. Anderson disapproves of racks for hay above the horse, as inconvenient to a tired horse, while the falling seeds are apt to blind him; hence, in one corner of his stalls he has a box, *a*, for corn, which may be of slate, iron, or enamel, while in the other corner, on the same level, he has a rack, *b*, for hay, with boxes underneath to receive the seeds. In a third corner of the loose boxes, *c*, he has a vessel for water, of which there is a constant supply laid on from a tank in the room, and regulated by a ball-cock. The dung-pit is peculiar,—it is a tank, formed of cement,



FRONT ELEVATION OF STABLES,

six feet by three, having an air-tight top, level with the floor, with a trap-door inside for throwing down the dung, and another outside in the road for its removal: in one corner is a grating through which the liquid passes off to the drain or liquid manure tank. From the centre a hollow tube rises to the roof and communicates with the external air, the lower part, within the tank, is perforated to within two feet of the level of the floor, and through these the noxious gases from the dung are drawn and carried at once into the atmosphere, where they are dispersed. The elevation requires little comment; it consists of a handsome brick building, in the front walls of which are four projecting square pillars, in each of which will be observed, about a foot and

a half from the ground, a small square grating. These pillars are hollow, and in them rests Mr. Anderson's principle of ventilation. The pure air enters at this grating, ascends to the top of the hollow pillars, where there is a corresponding grating on the inside, and is gradually diffused throughout the stable and all the other parts of the building. In this way he provides for the admission of pure air.

It will be observed that about one half of the roof of the building forms a sky-light; the other, to the extent of a quarter of its space all round, being slated and ceiled in the usual way. In the sky-light are three ventilators, so arranged as to be opened more or less, as occasion requires. These three ventilators are considered by Mr Anderson amply sufficient to carry off all the unwholesome gases generated in the stable, the mere diffusion of pure air being sufficient to keep the stable pure and wholesome.

Another desideratum in stables is, that they should be thoroughly dry. A horse can no more live in a damp dwelling, without suffering, than a human being, and, if a stable be damp, a remedy should at once be provided. The general cause of dampness is bad drainage. The floor and walls give strong indications of what is going on below, and if this be so, a system of drainage, irrespective of the tank drains, should immediately be adopted. It seldom happens that dampness in a stable may not be cured by efficient drainage, and thorough ventilation. But the necessary drainage, Mr. Anderson contends, cannot be obtained merely by thorough under-drainage, it requires a concrete foundation, not only to the walls but to the whole structure,—and on this system is his stable built, the concrete under the foundations being about a foot in depth, that under the rest of the stable six or eight inches. The floor of the entire building inclines slightly towards the centre, for the purpose of getting a sufficient fall for the drains. Loose boxes Mr. Anderson considers the most desirable stabling for horses, therefore, he has two of these, each nine feet nine inches by eleven feet six inches, the stall being of the usual dimensions. Hay and corn, he considers, cannot be properly kept over horses, however sweet the stable may be, therefore, he has avoided any loft over his stables. With these arrangements, he laughs at carbonic gas, ammoniac smells, and all other evils horse-flesh is heir to, as altogether impossible in a well-ventilated stable. If we were to be critical, we should object to two points in Mr. Anderson's otherwise most efficient arrangements—his harness-room is much too small to admit of harness being kept in it in high order. A door also appears to open into one of the loose boxes, which would seem objectionable, but Mr. Anderson explains,

that it has a south aspect, and that it is divided into two halves, the upper of which may be opened in a warm sunny day, much to the benefit of a horse recovering from sickness.

Another friend who takes great pleasure in having his horses properly lodged, has adopted what we think a most effective system of ventilation. The stable in question is for four horses; it is a brick building, of handsome elevation, with ample room in the stalls, all other arrangements being of the best description. The stable is lofty, not less than thirteen feet, properly ceiled, with hay-loft and corn-bin over it. Over each stall, at the height of twelve feet, is an opening for the admission of air, with an iron grating outside of each, and a slide within, by which the groom arranges according to the temperature required. On the opposite side, behind the horses, and about five feet from the ground, is another slide, also communicating with the outer air by means of a hollow wall, having a grating about a foot from the ground; this diffuses fresh air among the heavier gases generated in the stables, and can also be regulated so as to avoid any injurious draught. Moreover, the air admitted here, has the advantage of being somewhat tempered, the wall through which it reaches the stable being protected by a slated shed or pent-house for cleaning the horses under in wet weather. Over each stall, and opposite to the opening in the front wall, is placed a ventilating-tube of the usual construction opening on the roof, which carries off the foul air. This stable, with its appointments, is an excellent model, and is altogether free from smell at any time. We should add that although it has a hay-loft over it, the hay is only admitted to the rack by a slot which closes and shuts off all smell, or breath of the horses. The floor of a stall should not slope more than is absolutely necessary to carry off the superfluous moisture; if the declivity be too great, the flexor tendons of both fore and hind legs may be kept on a constant stretch, to the certain injury of the horse; but this seldom happens. The floor of the stalls should also be so paved as to furnish a fulcrum for the horses' feet, both in rising and laying down; nothing can be worse than a smooth bed, on a declivity of one inch in thirty-six; the horse is certain to be injured in his efforts to raise himself on it. The best floor for a stable is one paved with small round stones from three to four inches in diameter—the interstices filled up with gravel.

Much of the ophthalmia prevalent amongst horses is caused by the ammonia given off by the urine and droppings, but more especially by the former. This is to be dissipated by ventilation; but it may be absorbed by sulphate of lime or gypsum, as also by muriatic acid.

Peat charcoal, spread under the litter, not only removes all smell, by fixing and deoderizing the ammonia, but it forms a most excellent and efficacious manure. Many farmers conceive that *darkness* is an advantage to the stable, inasmuch as it induces bad feeders to eat: perhaps they are not aware that darkness is one of the most frequent causes of *early blindness*, or, at least, of considerable injury to the sight. Hence, also, a very frequent origin of *stumbling* and *starting*—two faults of a most unpleasant character.

A loose box or two are a very useful, nay, necessary appendage to every stable; in building a new stable, indeed, as we have seen in Mr. Anderson's case, every stall may be convertible, in a few minutes, into one. The box is most useful for a fagged and jaded horse, for it encourages him to lie down and rest; and to the idle horse, for it encourages him to walk about, amuse, and exercise himself. A box at some distance from the stable is useful in case of contagious or infectious disease; it is also useful as permitting of more variations of temperature than the ordinary stable, and into this—cooled down as nearly as possible to the temperature of the external air—should every horse just taken from grass be put, ere being removed into the warm stable; and, *vice versa*, ere being turned out of the warm stable to grass, in spring or summer. Such a system of management would prevent the accession of many a cold.

The ordinary practice of limiting the allowance of water is both inhuman and contrary to common sense. Nature never errs; and if water be left to the horse's own discretion, he will only take as much as is good for him. We may attribute to this curtailment of water many of the diseases of the horse—as slow fever, glanders, nasal catarrh, &c. When a horse is warm with violent exertion, the chill had better be taken off,—not by letting the water lie in the stable, but by adding a little warm water to it. In well conducted racing-stables water is given to the horses so frequently that they will drink but little at a time: surely this is better than keeping them so long without water that when it is given to them they will fill themselves to repletion.

The description of water a horse has given him to drink has much to do with his appearance and health. Cleanly as that animal is, we often see him prefer the stagnant soft water horse-pond, to the cold spring water of the pump-trough or the pellucid stream, from a bubbling spring. Nature teaches him best. Soft water is more healthy than hard—in other words, the rain water, with all its atmospheric impurities, and often with much decayed vegetable matter, is

preferred to the water highly charged with mineral ingredients, as spring water generally is found. It must be admitted, however, that whatever the natural preference may be, the habit of drinking the hardest water may be acquired, and after this is so, no difference in the health or appearance can be discovered. If it is wished to soften the water it can be boiled.

When the horse is at hard work, and much heated, a mouthful of water, a gulp or two, will be the most reviving aliment. It is a bad practice to allow the water to stand in the pails in the stable all night. If too cold it should at once be chilled, not in the absurd way it usually is—which destroys the tone of the horse's stomach—by adding large quantities of hot water; but a pint of boiling water is an ample chill for two gallons of cold.

There are times when the groom may find it necessary to restrict the allowance of water. To give a large pailful to a horse before a hard gallop would endanger his wind and injure the animal. He would ride sluggishly and heavily, and unpleasantly. But the thirst should be satisfied. This is easily done by an expert groom. He will give him small quantities at distant intervals, and so the horse will get enough without loading the stomach or intestines, or interfering with his work. But habitual restriction is the cause of the very injury complained of by the excess of water. The constant denial begets a longing for it, which, when full liberty to use it occurs, induces a voracity which ruins the horse. A little management and a little trouble will obviate all these inconveniencies. A groom who pinches his horse of water is often a lover of *drink* himself, who is not careful enough to give his horse water frequently, and unwilling to satisfy him when he gives it but seldom! A good groom will never have a regularly kept horse in a condition so thirsty as to be injured by water.

The *quality* of the water is also of primary importance! it should be pure, fresh, and sweet. Do not let *nitre* be mixed with it, unless when required as medicine—a very common practice amongst ignorant grooms, and occasionally even advocated by those who should know better.

CHAPTER IX.

GROOMING AND DRESSING.

THERE is both in the human system and that of the whole of the mammalian race a wonderful sympathy between the vital organs and

the skin. Between the lungs, especially, and the whole surface of the skin, the most astonishing connexion evidently exists—obstructed perspiration by a draught, on a small portion of the skin, will induce a cough in the lungs—the sign of functional derangement. Formerly this was believed to be mere sympathy between the internal organization and the vital viscera. But the recent discoveries of physiological science attributed it to a more intimate connexion. The lungs are found to be organs for burning the carbon, the fuel-food, and so to keep up animal heat; but there is another combustible element taken in, some of which passes off on the same element in which it entered but the rest of which is consumed in the system. That element is hydrogen, one of the components of the water, and aqueous matter taken into the system. This is burnt by the atmospheric oxygen at the skin, in the same manner as the carbon is in the lungs; and hence when the skin is not properly performing its functions, the extra labour of the lungs produces derangement. Hence the necessity of grooming. It is not the glossy coat, as such, which is to be prized. Malt, or balls, or heat, will obtain it. But "elbow grease" alone will give the animal the proper and healthy coat.

The ordinary farm-horse, at work all day and turned out at night, requires little more grooming than a rub down with a wisp of straw, and the removal of mud and dirt from his limbs; hardiness is necessary to the existence of this horse, and a regular system of grooming would only render the skin too sensitive, and the horse more susceptible of cold. But it is of the *stable* and the stabled horse that we are more immediately treating, and it is to him—deprived, as he is, to a great extent, of exercise—that grooming is most necessary, in order to cleanse away the scurf that obstructs the pores, to admit of free perspiration, and promote circulation towards the extremities.

In grooming a horse, the operator is provided with a currycomb, a brush, and a wisp. To this may be added a small knife, adapted for dressing. The first named is calculated to scratch off any dirt or perspiration which may have accumulated by exercise or work, and in horses recently taken up it is also useful in separating clotted hair, and even reducing or cutting its dimensions. It is an instrument to be used with care and caution, and may easily be very injurious to the horse, and scratch the skin. It is an operation which must be considered as only to be occasionally adopted, and then with nicety and gentleness, slowly and delicately passing over the hair.

The *brush* is the sheet-anchor of the groom, and the currycomb is often best used in cleaning the brush. The stabled horse has a

growing accumulation of scurf at the roots of the hair. This the brush is intended to remove; by passing between every hair it separates the smallest particles, and brings them to the surface.

The *wisp* is then in its proper vocation. It removes the scurfy and dusty particles from the surface. The *comb* sharpens and cleans the mane and tail, which sometimes require wetting to be made to lay properly, and the sponge washes out the feet and hoofs, and with these a good groom will not only have a glossy coat, but will have what is far preferable,—a clean skin for his horse.

There are two ways by which a fine, glossy coat may be produced —by heat and by dressing. The former produces it at the expense of the animal health; the latter in a manner highly conducive to health. The proprietor should therefore see that the fine coat of his hunter or riding-horse is produced by fair, honest rubbing, and the free use of the brush, and not by heated stabling and warm sheeting. Horses should, as a matter of course, be dressed every morning; the cleaning they receive after work is quite an extra matter. With horses that possess a very tender skin, the use of the currycomb should be dispensed with, and the *brush* or *haircloth glove* substituted for it. If you wish to ascertain whether or not your horse has been properly dressed, rub his coat with one of your fingers; if a *greasy stain* be present, your groom has slurred over his task.

After work a more determined course has to be pursued. The horse should be rubbed over. It is much easier to drive the horse through a pond or stream, or even to dash a few pails of water over the parts most likely to be dirty, or most troublesome to clean. This is slovenly, and not altogether free from danger. Evaporation will set in at a fearful rate, and if speedy steps are not taken to keep up the circulation, mischief may soon be expected to follow.

It is not desirable to dress horses in the stable, especially if several are in the same place. They may generally be taken out of doors with great advantage, and thus the dust and dirt will escape freely; but one of the best contrivances we have seen, is a *horse-cleaning house*, conveniently situated at the junction of two lines of stabling, and belonging to George Crowe, Esq., of Ornhams, near Borobridge, where the horse can be cleaned in the air, and still sheltered if the weather be cold or rainy. Another side box might be adapted to this purpose, in many establishments with very great advantage.

It is in winter that the neglect of grooming, or its slovenly performance will produce the worst effects on the horse, and with the greatest rapidity. On a horse coming in in dirty weather, the mud

should be first removed; this is usually done in two ways—first, by scraping it away with the sweat-knife, and finishing with the wisp and brush; secondly, by *washing* it away. The best mode of doing it, however, is, first of all to remove all the mud and loose water, by the aid of the knife; and then, should the horse be warm, walk him about for a quarter of an hour or so; then use the *wisp*, and rub him dry; wash the feet and legs, pick the soles, look at the shoes, rub the feet and legs *dry*—this is a most important consideration, and one that is generally too much neglected, hence giving rise to many severe colds, inflammations, and often *grease*. Comb the mane and tail. These operations are terminated by a careful finishing with dry wisps. When a horse is quickly and effectually dried in the manner we have detailed, there is not the slightest danger of his catching cold; but there may occur, in very rare instances, certainly, but still there *may* occur, cases where the horse cannot be thus groomed, but must be put up in the wet state in which he came off the road.

In these cases we resort to *clothing;* this is *never* to be resorted to where it is possible to groom, and is on no account to be regarded as offering a substitute for manual friction; it is merely to be regarded as an expedient—a *last resource*, better than absolute neglect; it may, however, be well to know that such a resource exists. The object of clothing, and the manner in which it acts as a preventive against a wet or over-heated horse catching cold, are as follow: cold is caught in consequence of the sudden cooling down of the body at the surface, producing increased action of the respiratory and vasculatory system; in order to the supply of the deficiency of animal heat thus produced; inflammation of those organs, or some portion of their attendant apparatus, consequently takes place. The cooling of the surface is caused by the evaporation; the more rapid the evaporation, the more sudden and severe the chill. The clothing then acts, by preventing or retarding evaporation; the horse consequently loses heat so slowly that his natural vigour is able to keep up the necessary supply—in short, he *never becomes chilled*. The clothing should be woollen, and thrown loosely over the body,—it then absorbs some of the superfluous moisture,—not strapped down upon it, as that is apt to excite undue perspiration.

A somewhat modern invention, to dispense with some of the labour of the groom, is the operation of *clipping*. The coat of the horse naturally lengthens in winter, to protect him from the low temperature of that season, and drops off or moults in the spring. Now grooming is to give the horse in winter his summer coat; and clipping

is a ready way of jumping to this condition. The operation is usually performed by a professional clipper, and is a work of too much nicety and skill to be performed by the ordinary groom. Great care to prevent exposure and wet is necessary at first; and for some time he must not stand, and should be clothed when taking exercise in cold or damp days. With the wonderful plasticity which nature displays in all her operations, he is soon fit for ordinary work, and a vast amount of labour is saved to the groom after clipping. He is free from the hair which takes so much rubbing dry—a wisp, or a soft broom, will soon bring off all the dirt and sweat without the currycomb; and if half an hour was necessary to dry his coat before, fifteen minutes will now suffice. A greater degree of energy and activity are necessary, in grooming, after clipping than before; there must be no dallying—no half work—the horse must be actively groomed at once, or his fate is sealed for cold, or an attack of distemper.

The objections to clipping arise more from the extra care and attention required *after* the process, than any direct injury inflicted on the animal *per se*, but it must not be forgotten, that the same neglect which induces a long coat of hair, will sometimes also operate in producing injury by cold afterwards; all horses are more or less liable to injury from cold; to be sure, some horses will constantly be seen exposed to all the severity of the most inclement weather, and yet escape; such have been probably gradually inured to exposure; and the power of the animal system to accommodate itself to circumstances is very great; but surely a little trouble is preferable to great risk, especially when valuable horses are concerned. A wet horse requires most care when he has been *heated by his work*. The reader has probably experienced this in his own person; after copiously perspiring he has felt cold and shivering, even though his skin be at the time quite dry. So it is with the horse: before he has been heated he might stand in the cold, or with his coat wet, for perhaps half-an-hour, without experiencing any ill effects; but, after perspiring pretty freely from exertion, exposure, without exercise, to a cold atmosphere, for fifteen minutes, will do him more mischief than similar exposure for an hour would have caused him before the exertion.

When a horse has contracted mischief from the exposure, the first symptom is generally a *staring of the coat*. When this is perceived, let the animal be at once put into a warm stable, and warmly clothed; or, if the weather be favourable, let him be at once put into motion. Your object is, to restore the vital heat—to produce a healthy reaction

in place of chilliness and prostration. If *shivering*, which next shows itself, should supervene, you will have to administer hot drink, and to clothe the horse with flannel sheeting, previously *warmed;* friction with the hair-glove, in the *warm stable*, especially under the belly and behind the joints, will be useful; but in all probability it is too late, and inflammatory action has set in.

CHAPTER X.

MANAGEMENT OF FARM HORSES.

Of late years this subject has had great consideration by the different agricultural societies, and more than one valuable essay has appeared. The one from the pen of Professor Spooner may be supposed to possess the highest authority, as it has received the sanction of the Royal Agricultural Society. To it, therefore, we shall look for a synopsis of our present knowledge of the subject, and yet we are by no means disposed to agree with all that he asserts.

Great difference of opinion exists on the question whether farm-horses should be kept in the stable, or in the open air, during the summer months. During the winter months, or from October to May, there can be no question that all horses should be housed; and yet we know farmers, and good ones too, who pursue a contrary practice, and turn their horses out all winter. They give them an open yard to roam about, and an open stable where they may take shelter when they please. This is leaving the horse to select his own comfort; but though instinct teaches all animals in a state of nature to avoid what is injurious to health, we doubt if animals in the domesticated state possess these instincts sufficiently powerful for the purpose. But suppose this objection overcome, that of allowing several horses to herd together in a confined space remains. They will invariably harass and hamper each other and a master horse will probably select the stable door to stand in for shelter in a storm, and thus keep all the others exposed to its pitiless pelting.

Professor Spooner thus expresses himself on this subject:—"During eight months of the year, viz., from October to June, there can scarcely be a doubt that it is desirable in every respect to keep horses in the stable. The effect of exposure to the cold and wet during this period is indeed tantamount to the waste of so many quarters of

oats; for if the animal heat is permitted to be thus purloined by means of exposure, an additional quantity of fuel, in the form of food, becomes necessary to supply the deprivation; for there is no fact in animal chemistry better established than this, that the principal use of the non-nitrogenized or carbonaceous part of food, is to furnish a supply of carbon, which, uniting with the oxygen of the atmosphere in the lungs, gives out heat as in ordinary combustion, and thus serves to keep the animal temperature above that of surrounding objects. It is, therefore, a very costly method of procuring a certain amount of animal heat, when such heat, or a good portion of it, can be retained by keeping our animal in a comfortable stable. Besides which, the effect of turning a horse into the open air is to cause him to have a long thick coat, this being one of Nature's resources to counteract the effects of cold. When a horse is worked with such an external covering, he sweats readily and profusely in consequence, and is faint and weak after very little exertion. Thus, in whatever way we look at the question of turning out, it is decidedly objectionable in every respect."

Such is the Professor's opinion on the question of turning out in winter—an opinion to which we cordially assent; but it must be understood that a clean, well-ventilated, and moderately warm stable is required. We consider any system preferable to shutting up horses in close, suffocating, oven-like stables, such as some of our modern erections are, and prefer much the old-fashioned farm stable, full of crevices and crannies, where we find ventilation and pure air, for if the wind does sometimes whistle through it, the farm-horse, after all, has to bear many a blast out of doors from which there is no escape. He has to cart turnips in a cold bleak December morning, and to wait in the cold till his load is full! From which stable is he likely to suffer most,—the close, pent-up, unventilated one, or the free, airy, perhaps cold and windy one? If accustomed to the latter, he has his coating and system prepared for his work, if to the former, severe injury is inevitable.

So much for turning out in winter. But a middle course is sometimes adopted. Mr. Lawrence of Cirencester, a gentleman who carries out to the letter every suggested improvement, has adopted stalls capable of being made into loose boxes. At the head of the stable, before the stalls, is a passage, which communicates with the rack and manger, so that they can be fed either with chopped straw or hay from the head, without at all approaching the heels. At the end of the partition of each stall is a gate which will shut the stall entirely

up, or will fasten to the wall, hanging on a square, so as to adapt itself to either position. The horse is therefore in a loose-box, all inclosed, and can take any position he pleases, while the gates will either all shut, and leave a passage behind every horse, or will attach to the wall at the end of each stall, and so double its size, giving ample room for the horse to turn or lie at pleasure. He is also bedded with cut or chopped straw. The manure is well made by this system; but there is some difficulty in keeping the horses so clean as when they are tied by the head, as they are left to select their own bed when loose. Still these objections may be obviated, and there can be little doubt that if well cleaned out, as they are at Cirencester, the horses live in much greater comfort than where they are tied by the head; they have also better access to the air, and are generally more at liberty, without any danger of interference with each other, than when confined by the head.

But as regards the summer soiling of horses—that is, the keeping in the horse all the year round—a somewhat different principle applies. While nobody would urge dry food, perhaps, for farm horses in the summer months, there are those who would soil with green food even then. They have good show of reason for the practice. They allege, with truth, that it saves the horses a vast deal of labour. The draught horse works hard and long; he has not too much time, it must be confessed, in summer, either for rest or feeding, and if he has to roam about for his food, it is so much abstracted from his necessary rest. He has, in addition to his field-work, to work for his own subsistence—to cut and chew his food—and to wander about searching for it; whereas, in soiling, the scythe takes the place of the horse's head, and the cutter of his teeth, and he is resting even while eating his meal. Again, they allege that there is a vast saving of manure. Not only, it is said, will the dung waste and evaporate, but the caustic urine will burn up the grass, and do absolute injury instead of good,—that the flies and insects are extremely teasing and troublesome—and that the only satisfactory mode of feeding is to soil in the house in summer, as well as in winter. Nay more, it is urged that they are always at hand for use—that they have no distance to travel to pasture—and that the great mass of straw turned into manure in summer will repay for the extra labour of cutting and carting the green food, on which they are kept—that there will also be an economy of food in this mode of consumption.

These are reasons which appear very weighty, and yet there are, as in most cases, two sides to even this question. The first objection is the

expense of carting the whole of the food for a great number of draught horses. The mowing, the gathering, the carting, the strewing, the cutting, together with the danger of fermentation and spoiling, are amongst the objections to the practice. Then a close stable in summer is pestiferous. The air of heaven is sweet and delightful, but the stable in hot weather is a sink or pest-house. Unwholesome vapours, hot air, rapid decomposition of fœcal and urinal matter, and the smells of putrifying vegetation are such as must interfere with both health and comfort, and even with life. The horses are never cool. They are subjected, after a hard day's work, to the oppression of a night's confinement in a close, ill-ventilated stable. For turning out in the summer months, Professor Spooner gives a decided preference. He states its advantages to be a saving of litter, as well as a saving of labour, in carting to the stable. The coolness of the pastures during the night, as compared with the heated stables, is, he considers, very conducive to health, and flesh is generally gained at this period. The loss of dung may be obviated, he goes on to observe, by employing a lad with a wheelbarrow and shovel to collect the droppings from time to time into a heap, to be afterwards mixed for a compost. He well remarks, moreover, that this exposure is not to be stretched too far. "When the nights get cold, and before the moulting season sets in, the horses should be no longer turned out at night; but the change may be rendered gradual by letting them out a couple of hours in the afternoon, after the day's work is over."

To begin with the farm-horse, which is supposed to have been house-kept from October till the 20th of May, if the weather be mild and genial, or till the 27th if otherwise,—but now he is to be turned out. For this purpose, it is presumed that a proper pasture has been reserved, having a full bite, at least six inches long, of the red and white clovers, with stubble or rye-grass, and perhaps a little trefoil mixed with the natural grasses, according to the character and condition of the soil.

The day selected for turning out should be a Saturday. At noon of that day an extra feed of corn should be given them, to mitigate the appetite with which they attack the young grass; and about seven o'clock in the evening they should be turned into their pasture, on which they will eagerly feed till the morning. If now put to work with a full stomach, and before the dry hard food of the previous day has passed through them, injury may be done. For this reason, Sunday, which is usually a day of rest to the farm-horse, is recommended for this great change in their diet. The appetite for the fresh

grass is appeased—the day's rest facilitates digestion. With these precautions, and on good sweet pasture, the new food is assimilated, and the change is completed without injury.

When the weather is wet and cold, a little shelter must be afforded, but no recurrence to dry food, when the horses are either turned out for the summer, or where soiling with green food is adopted. When the pasture is too distant, a feed of crushed oats may be given at noon; but it is more usual so to arrange matters that the pasture is chosen near to the fields where the horses are at work. At noon, when this is the case, the horses are unharnessed and turned loose to feed for an hour or an hour and a half, while the workers have dinner. During turnip-sowing, seed, and harvest time, when the horses have very long hours, it is by no means a bad practice to soil the food altogether, giving only a feed of crushed oats with their ordinary food. Both the green food and the crushed oats are highly nutritious, soon swallowed, and easily digested, an advantage at this season when time is precious; in such times of hurry, however, we much prefer leaving the horse to his cut tares or clover placed before him in the cart, or, if ploughing, with his nose-bag during the dinner-hour. With this liberal treatment, it is impossible to estimate the vast amount of work a horse will get through, or its value during the time of turnip sowing, which is often a dry season.

The pasture usually fails a little in August, and in September the second crop of red clover supplies its place. Where sheep are kept, it is an excellent plan to mix the stock as much as possible—keeping in mind, however, that the pasture must always be kept good. If a closely eaten seed field is now and then freed from all stock, the grasses will spring up young and smart, and this constant change of pasture has a beneficial effect on the health and comfort of all classes of animals.

It is desirable to save a supply of rich clover, or of winter and spring tares in succession, for the soiling of the horses at noon in very busy periods; the last named food is excellent to put before the horses in harvest, when carting corn; on these they will work for an incredibly long period. Their succulency will afford the requisite moisture, and the animals will obtain rest enough while they are standing, especially if the owners take the precaution of placing a stilt under the cart shafts, during the time the cart is being loaded.

In September or October, according to the state of the work, of the pasture, and of the weather, the horses should be again taken into the stables. By this time the second crop of clover will be exhausted.

But ploughing, stubble-clearing, and other autumn operations, will be in rapid progress, and extra work requires extra food. At this time, therefore, chopped clover, crushed oats, and split beans will afford solid nourishment, and supply the deficiences of the grasses, which at this season are of a soft and watery nature. The least indication of frost should be a signal for taking them into the stable, at least during the nights; and, as this change is one of very considerable magnitude, there should be a little preparation. The rapid change from soft, wet, succulent, to totally dry food, is sometimes too much for the digestive organs, and horses at this season have frequently attacks of dyspepsia—sometimes mistaken for cholic, and a false treatment is often adopted, causing inflammation, and death supervenes.

We object *in toto* to the drenching and quacking of horses in good health, as a general rule. To give physic or a staling ball in the spring and autumn, and even to bleed, reason or none, all the farm horses in a stable, is a plan as absurd as it is objectionable,—weakening and dangerous to the animals, and involving trouble and mischief at every step. But as the change is mainly one of diet, so it may be remedied by simple dietetic treatment. The horses should have at first two large bran mashes per day—if a handful of linseed meal is added to each mash it will be a very great advantage, both in a medicinal and nutritive point of view. Some persons add a little saltpetre or resin, and, if it amuse them to do so, there need be no obstacle if the quantity do not exceed a few drachms. But all such alteratives, as they are called, must be speedily dropped; two or three days should satisfy the most determined quack. To these mashes should be added two liberal feeds of roots. At this period it is of less consequence whether these roots be carrots, white turnips, or swedes. They all serve the useful purpose of supplying succulent food, and thus simplifying the transition from green food to dry.

But how are farm horses to be fed in winter? This is the great problem. It is a question of cost as well as of physical economy. What will keep them most healthy and fittest for work? The most straightforward of all modes is simply to dry the grass in summer, and thus preserve it in winter—in the shape of hay. It is, however, of all methods the most costly; it involves a very great expenditure of land for the winter keep of the horses, to which must be added the rates, tithes, taxes, and cost of mowing, winning, stacking, thatching, &c., amounting to little less than 15s. per acre.

This the farmer cannot afford. His horse has but little work in

winter, and therefore he must be kept on a cheaper food than the grass of summer, with the additional cost of preservation added.

Food for the horse must have bulk as well as chemical properties. He will *live* on a very small amount of concentrated food. The late Mr. Lumley Kettlewell, of York,—an eccentric gentleman of fortune,—made a great many philosophical experiments on the effects of different kinds of food on horses of various kinds, especially blood stock, with a view to reduce the quantum of bulky food, and to substitute cheap nutriment in an almost infinitesimal form. Many of his experiments failed, and the vulgar prejudices of the day attributed death by starvation to many of the animals on which he experimented. He established the fact, however, that for a very considerable time a horse would live on a pound of sugar per day. Had he added nitrogenous food—the element of flesh—in small quantities, it is probable his experiments would have been more successful. His sudden death prevented any matured result of these costly experiments from being published.

To sustain health, there must be bulk to extend the walls of the stomach, as well as nutritive aliment to supply the waste of heat, fat, muscle, and bone. It is a mistaken economy, therefore, to pinch animals at any season of the year of their necessary food. Professor Spooner well says, speaking of the advantages of keeping horses in good condition, "that *two* horses *well fed* will do the labour of *three* horses *badly kept*." Nor will there be the absolute saving of food. A hungry horse devours and bolts great quantities of his food, without the mastication which will be given by better fed horses. What, then, is the best food for horses? With oats at twelve to fifteen shillings per quarter, nothing else is so cheap. They cost little more per stone than hay, and are much more nutritious. Oats and straw, if the former is given in proper quantity, will be an ample food for the draught-horse for five of the winter months, when the labour is seldom very severe. To this may be added as a sanitary measure, either carrots, common turnips, or swedes. Carrots stand, perhaps, first on the list, and Swede turnips the next; when horses are doing little work, either of these will be found a valuable addition to straw; by keeping the bowels in a healthy and active state, they promote health and prevent grease and humours.

And then arises the question of chopping. There are few agricultural authorities who do not contend for this process. They allege that it saves the horse the *time* and *labour* of chewing the bulky por-

tion of his food, and, by lessening his labour, gives him more time for rest and sleep; while the mixture of corn with the straw, compels him so far to chew and masticate, as to ensure his crushing the whole of the oats. Nay, more, that as oat sheaves can be chopped without thrashing at all, this saving will more than compensate for the expense of chopping.

To this it is objected, that no man who chops his sheaves knows what he is doing. He cannot determine the quantity of *corn* he is giving to his animals in proportion to the straw, nor can he tell the yield per acre of his oats—which is a further difficulty. And as the horse can have *no* oats or other concentrated food in this chopping system, especially when the crop of oats has been good, and the straw bears a larger proportion to the corn, it is highly objectionable and defeats the very object it purposes to cure, namely, saving the time and labour of the horse.

Oats at present prices we think the cheapest food for farm horses; and, if crushed, there is no danger of loss for want of proper mastication. To give a comparative estimate of the cost of the nutritive matters of hay, as compared with oats, it will stand thus:—100 lbs. of clover hay contains—

Of respiratory elements,	40 lbs. of starch, gum, and sugar, &c.
„	4 lbs. of fat.
Of nutritive elements,	9 lbs. of albumen, gluten, &c.

Taking the first at one penny per lb. and the last named at three halfpence per lb., the 100 lbs. will be worth 4s. 9d.—the value of the hay will come to some £5, 12s. 6d. per ton. Now if, in juxtaposition to this, we take oats, they contain in 100 lbs.:—

Of respiratory elements,	46 lbs. of starch, gum, sugar.
„	5 lbs. fat.
Of nutritive elements,	11 albumen and gluten, &c.

And reckoning the first two at one penny per lb. and the latter at three halfpence, we have the 100 lbs. worth 5s. 2d., so that, if a bushel weigh even as little as 37 lbs., oats are as well worth, for nutritive purposes, 20s. per quarter, as hay is worth £5, 12s. 6d. per ton.

In the wintry months—till preparation for the spring seed time commences—straw, it has been said, is all that draught horses will be found to require. But, as the work becomes harder, the days longer, and the seasons of entire rest fewer, clover may with great advantage be added instead of straw, and this will have to be given till the horses are again turned out to grass. In some seasons, when barley is, stone for stone, cheaper than oats, we have partially

substituted it for the more usual and fashionable grain, and, up to a certain point, it may be advantageously given. As it requires much more maceration, it is absolutely necessary to crush it before it is supplied, and great caution will be required not to exceed the proper quantity. Barley is stimulative and heating, and if it is the only corn the horse is supplied with, that is, as the staple of food, straw being the remaining pabulum, a mixture of bran and a very liberal supply of roots will be absolutely necessary with it.

Great advocacy was at one time used for cooked food for horses, and especially steamed hay. It was urged that the process rendered the hay more digestible, that it worked a change so extraordinary that the mouldiest hay would, after the steaming process, become nourishing and wholesome. The experiments of the Highland Society, however, did much to expel this delusion, and steaming horses' food is now very generally abandoned. It is neither uncommon nor unwise, when barley is selling at a lower relative price than oats, to give the horses a portion each per day of boiled barley. It is thus cooked:—The barley is placed in a furnace or boiler, with water just sufficient to cover it. It is closely covered up and fire is then carefully applied. As soon as it boils, the fire is allowed to die out, and the barley will be found to be soft and swollen, and to have absorbed the whole of the water. The barley will have increased, in four hours, nearly fifty per cent. in bulk; a little salt is added to this when given to the horses; nor can they have a more palatable and grateful food after a hard day's work.

Recent experiments with linseed have a little revived the question of feeding horses with cooked food. The vast power of the linseed in developing its extraordinary mucilaginous particles, by the application of heat, is a very peculiar quality; and it is known by recent experiments that horses can do any amount of ordinary work on linseed compound alone, with roots, without either clover, hay, or corn. The compound is very similar to that spoken of in the editor's work on "The Cow," belonging to this series of handbooks, and is one of the cheapest modes of keeping horses in winter; their health keeping pace with their power and strength.

Thrice a-day, the horses have a feed consisting of 2 lbs. of linseed meal, 2 lbs. of barley meal, 1 bushel of chaff, 1 gallon of water. The meal is boiled in the water and poured upon the chaff. They have also a full feed of roots per day, say 40 lbs.; and on this, with barley and straw, the horses will remain in most excellent condition.

The cost of keeping farm horses varies more than may be imagined.

The great amount a farmer pays for horse-keep, ought to make horse flesh the most valuable of all his property. But he is rarely aware of this. He calculates only his outlay. The oats, the roots, the clover, the grass, are *his own* produce, and he never calculates that they could be sold for money. The editor once hinted to a farmer who kept twenty horses for his farm, his riding, and for breeding, that they cost him £400 per annum, and he stood aghast! But he kept them for no such money.

Writers on horse-keep make sad mistakes. Otherwise, it is impossible the estimates could vary from £20 to as high as £40 per annum for draught-horses. One element of error consists in valuing the straw consumed by horses. Professor Spooner falls into this error. Now, though it is perfectly true that the farmer might often sell his straw, yet, generally, he is prevented by his covenants from doing so. He has more difficulty, moreover, in disposing of his excess of straw than in supplying deficiency; and it is by no means uncommon to send the straw to a distance of several miles, receiving nothing but the manure it makes in return, and even this has to be carted back at a great expense. Hence all calculations of cost should have this item omitted. Nor will the present prices of produce be forgotten in estimating the value of horse-keep. To give a few samples of the cost of keeping farm-horses by two or three methods, the following may be selected:—

	£	s.	d.
12 weeks, from November to February:—			
Oats, 2 bushels, at 16s. per qr., per week, 4s.; Swedes, 42 lbs. 3d.	2	11	0
20 weeks, up to turning out, and in wheat seed-time:—			
Oats, 2 bushels, at 16s., 4s.; Beans, 1½ pecks, at 1s., 1s. 6d.; Clover, 8 stones, 4s. 6d.	10	0	0
20 weeks good pasture, and second crop of clover, at 6s.	6	0	0
Extra corn and mash, say	1	10	0
	£20	1	0

This is exclusive of attendance, as the carter or the ploughman, on farms, attends to his own horses as a part of his day's work, and therefore it is not calculated.

The soiling system, when adopted, is thus made out:—

1st quarter:—

	Per week. £	s.	d.	£	s.	d.
1½ bushels of oats, at 2s.	0	3	0			
1 peck of beans	0	1	0			
1 cart of cut hay	0	4	6			
	£0	8	6	5	10	6
				5	10	6

					£	s.	d.
Brought over					5	10	6
2d quarter :—							
2 bushels of oats, at 2s.			0	4	0		
1 peck of beans			0	1	0		
1 cart of cut clover hay			0	4	6		
			£0	9	6	6	2	0
3d quarter :—							
1 bushel of oats			0	2	0		
Cut clover, 51 stone, at 1¾d.			0	6	4		
			£0	8	4	5	8	4
4th quarter :—							
1 bushel of oats			0	2	0		
1 cart cut clover			0	4	6		
			£0	6	6	4	4	6
					£21	5	4

The keep for the first quarter is by far too low, and at least one pound should be added for roots and extra food. Nor is the cost of carting and removing the clover-hay all calculated. From what has been advanced, it appears pretty clear that, at present prices, draught-horses may be kept in good working order at twenty guineas per annum.

It is seldom necessary to exercise farm-horses. There are few days in the year when nothing can be done with them, especially where a thrashing-machine is used. But one, or even two days of absolute rest, will never do harm. If any circumstance should arise requiring them to stand a week or more in idleness, a little out-door exercise would be necessary. Turned loose into a straw-yard for a few hours each day would, however, be all that would be found generally necessary.

CHAPTER XI.

HORSE BREEDING AND STUD MANAGEMENT.

Breeding horses is carried on with one of three objects, by the farmer and professional dealer for purposes of profit, by noblemen and gentlemen of property to replenish their private stud, and keep up the breed of horses in their respective localities, and by the farmer and private gentleman from the circumstance of their possessing a mare

which is a favourite, and whose race they wish to perpetuate, or one for whom there is no employment, and they take the chance of her dropping a valuable foal; or, what is still more usual, she has had an accident, and they wish to make the most of her, without giving much attention to her fitness for the purposes of propagation. We shall endeavour to throw together a few practical instructions for the benefit of each of these classes. The first portion of our remarks will apply to each of these classes of breeders, the latter portion more particularly to the breeders of blood stock and hunters.

There are no specific rules for the breeding of horses which apply to that class of animals alone—at least so far as is generally at present understood. One and the same great principles apply to the horse, the cow, the sheep, and the pig,—only the object in breeding the one is essentially different from that of the other. The sheep and the pig must be bred to feed—the cow to feed or to milk; but the horse must be bred to *go* or *pull*. Hence, while the organs of nutrition and re-action are sought for in the former class of animals, those of respiration and locomotion are those most desired in the latter. But valuable as are our race of horses for general purposes, different nations do not seem agreed as to the mode of obtaining the best. The Arab thinks little of his stallion beyond his pedigree. If his blood is untainted, he thinks of little more; he depends upon his mare for a promising and successful progeny. The Englishman thinks just the reverse. He travels miles and miles, and attends one show after another to select a proper stallion, for, perhaps, the worst mare of his stud; and yet both countries possess a meritorious breed of horses, though, perhaps, there is a vastly greater proportion of *brutes* amongst English than Arabian horses. This, however, may possibly arise from other circumstances than mere attention to breeding.

Without entering into the vexed question of the relative influence of the male and the female animal in horses, or the fanciful theories which have been advanced in connection with it, it may just be named, that some time ago the Highland and Agricultural Society of Scotland opened this very difficult question, and it was propounded in this manner:—whether the breed of live stock be susceptible of the greatest improvement from the qualities conspicuous in the male or female parent? A variety of opinions were elicited, and some from names standing very high, both as the greatest scientific authorities of the day and the best practical breeders. Mr. Boswell, of Balmuto, takes the side that the male is the animal which possesses the greatest transmissive power, and after an elaborate investigation, concludes that "he is the parent, to which

we can alone look, from motives of sense and sound polity, for the improvement of our breed of live stock." Of some males, this is true almost to a proverb. When, for instance, did any one know a foal by the widely-famed President which did not inherit his spirit and action, and even his form? Nay, young President seemed even to inherit his father's graces, as well as his transmissive power. A somewhat more modified view is taken by Mr. Dallas, of Edinburgh, who gives his opinion, that while the male animal is more powerful for imprinting external qualities, the female is the more powerful for those which are internal. Hence he teaches, that the sire ought to be selected for the improvement of the colour, coat, or outward form, and the female for milking, hardiness, temper, and freedom from internal tendency to disease. Mr. Christian, of Mill, takes a middle course, and contends that the offspring partakes of the qualities of that parent, be it whichsoever it may, which exerts the greatest influence in the formation of the fœtus,—and therefore concludes that it is unsafe to trust to either animal implicitly, but to select for breeding the best on both sides which can possibly be found. That this is a safe theory, there cannot be the slightest doubt; but the late Rev. H. Berry argued that all improvements of a breed are attributable to high blood, and not to sex at all, that animals being carefully selected, and kept pure and unalloyed, are those only to be trusted in their transmissive energy,—but, with the modesty so common to all well-informed men, he concludes by admitting, "that with our present scanty stock of information on this difficult question, one only rational course can be adopted by breeders, viz., that of resorting to the best male,—a simple and efficacious mode of improving such stocks as require improvement, and the only proceeding by which stock already good can be preserved in excellence." Professor Spooner, who writes anonymously, gives a distributive effect to the agency of the parent. Classifying the qualities of all animals as referable to temperament,—the nervous, where intelligence and mental qualities prevail; the thoracic, where the action of the chest and respiratory organs were predominant; and the abdominal, where the feeding propensities prevail,—he seems to intimate that the sire has to do with size, general appearance, and muscular development, while hereditary disease and weakness of constitution are more likely to be communicated to the offspring by the mother than the father. He even goes further, and contends that "when a handsome well bred mare is covered by a large coarse stallion, the defects of the latter are generally considerably softened down; the head is finer, and though the frame of the offspring is larger than

the dam, it is handsomer than that of the sire. The result of this cross is generally superior to its converse, where the sire, for instance, is thorough-bred and the dam a coarse and heavy animal. The progeny, in this case, is often unequal and ill-arranged, possessing, perhaps, the fine legs of the sire and the coarse body of the dam."

In favour of the power of the male as to form, he instances the offspring of the male ass and the female horse, whose size and appearance far more resemble the sire than the dam,—long ears, spare development of muscle, narrow, fat, and sluggish action;—he further urges that the smallest mares will, when served by large horses, produce large progeny. Thus, mere ponies will produce stout cobs and galloways, and well-bred mares of fifteen hands, put to a powerful stallion, will give a good size carriage-horse.

In addition to this, as polygamy is the rule in horses, and a mare can hardly be said to produce more than one in a season, while for a few years a stallion will produce fifty; or, giving ten years as the average duration in virility—and in the case of a male horse it is generally much more—the one will have produced ten foals and the other five hundred. Hence, as a *fact*, and connected with our present mode of treating animals, the male has by far the greatest influence on the horses of a country, quite irrespective of his having superior individual effect on the progeny.

The late lamented Lord Spencer,—who preferred animal physiology and the study of georgics and bucolics to the rivalry of political debate and the statistics of national exchequers,—gave great attention to the points to be arrived at in the selection of male animals. Constitution was by his lordship placed at the head of the list; and hence he recommended a wide chest as a first desideratum, and as being the most strictly indicative of this peculiarity; not only wide in the front, however, but continuing the width behind the fore-arms, further indicated by fullness behind the elbows. A masculine appearance is also another of his indications of constitutional power. Large muscles are also an indispensable quality in all male animals, whether for food or burden. There are, however, no fixed rules for selection. Cully attempted a code of rules in 1800, and for half a century we know of no improvement on his description, though breeding and horses have become quite another matter since his day. Like Bacon, Cully saw far before his time, and fore-shadowed the knowledge since proved to be practical by the lapse of fifty years. His rules required smallness of head in the stallion, fine muzzle, expanded nostrils, prominent and cheerful eyes, small, upright, slightly-separated

ears, tapering and slightly-curving neck, his shoulders slanting and thin, "going into his neck unperceived"—to use his definite, but somewhat awkward expression. And this is of more importance than can well be imagined. The horse Prince—one of the showiest and most favourite coaching stallions of his day, well made generally, a gold bay, upstanding, elegant horse, likely to breed coachers from country mares, and carriage-horses from half-bred mares, in grand style—had this peculiarity. He had thick shoulders; and some of the prettiest progeny resulted from his mares, yet they all had thick shoulders, and a propping, hobbling, stilting action, which battered their fine legs to pieces. They stumbled, and cut, and foundered,—were soon incurably lame, and became prematurely old horses.

To return to the qualifications of a stallion:—He must have muscular fore arms and thighs; circular and wide hoofs; deep and broad chest; round body, and broad loins; long quarters; and tail set on in a line with the back. Hind legs and thighs strong and muscular, with clean lathy legs.

In addition to these, the cart or draught horse should have broad hocks, strong flat legs, elbows not too close to the chest, neck rather thick and a little arched, setting on of the head not too acute. For horses used to the collar,—broad straight back, round ribs, and quarters full and muscular.

The mare requires other qualifications. The same remarks apply as to smallness of head, fineness of colour, animation of countenance, brilliancy of eye, and liveliness of appearance. Her jaws must be clean, neck tolerably long, and decidedly strong and muscular at the base, a slight and gentle curve from the withers to the poll, strong and compact knee-joints, clean flat legs, broad based, round foot, withers not too high; she should also, like the stallion, have a deep and broad chest. The shoulders should lie well back; the scapula, or blade-bone, lying obliquely from the shoulder joint; the blade should also be long and wide, and extend nearly to the top of the withers, but attached so closely and so well covered with muscle as not to present any remarkable prominence; the back of the shoulder should be well furnished with muscle, and it should appear to the mounted rider, of a *wedge-shape*, widening towards his knee; the fore-leg should be perpendicular, the toe and the point of the shoulder being in a right line; the foot should be round, even, and of a dark colour; the heels should be open, but not low; the brisket should be deep and narrow;—this especially applies to a riding-horse, as otherwise a crupper will be necessary to keep the saddle in its

proper place;—the quarters should be long and oval on the top; in a brood-mare too much breadth cannot be allowed to the hips; but too wide hips in a stallion are an ugly and objectionable point; attend to the houghs, and see that the shank-bone and sinew, both before and behind, be well developed, and dropped straight below the joint. Horses with steep pasterns are seldom comfortable roadsters. Nor need it be said that disease should be carefully guarded against, lest they should become hereditary. Blindness, ringbone, spavin, roaring, broken wind, or contracted feet, &c., should either of them be enough to condemn either horse or mare for breeding. An instance is given by a writer, to prove the force of this truth; a mare with a small bone spavin being bred from in three successive years from different horses. At four years old they were all affected with spavin; and two of the three were utterly unfit for work at five and six years of age.

Take an opposite instance, related by Stephens, the talented editor of the "Edinburgh Journal of Agriculture." He wished to breed a succession of the very best draught-horses. He sought the best young mare he could find, and bought one, such as is seldom shown in a fair, for £42. She was of the Clydesdale breed, and at five years old he put her to a prize Clydesdale stallion—the best of his class. She had four foals in four successive years; the two first—two fillies—were sold at his sale for £108, for brood mares; two four-year-old colts brought £38 and £44.

From this it is clear how much may be done by careful selection, good constitution, and *youth*. If mares are reserved till they are old before they are bred from, their vital energies are impaired. The black cart-horse, of which we have given an engraving in our chapter on draught-horses, was from a mare five years old, and was her first foal—nor did his birth interfere more than a month with the mare's constant work on a light turnip-soil farm.

It may be imagined that the breeding of horses is a source of great profit. A hunter is often sold, at five or six years old, for a hundred guineas, doing a certain amount of light work for his master in the mean time; and, some chance time, as much as one hundred and fifty guineas are given. Indeed it is nothing uncommon for noblemen to give a larger sum; the late Lord Alvanley was always ready to give two hundred guineas for a hunter that would carry him at speed for twenty-five minutes. This seems to offer a very great encouragement to breed horses, especially of the better class. But it is a problem referable only to the laws of *chance*. There are risks, and chances, and expenses without end; and though judgment, and the selection of a

good stock from which to breed, have much to do with success,—yet, like a toss of the dice, "luck's all." The breeder of valuable horses has the risk of keeping brood mares which do not breed, or which are abortive in their produce; or the foal comes a filly—or it goes on prosperous, and an accident happens—which turns out a blemish—and so years of keep are thrown away. These chances are so many, and so great, that it requires insurance-tables, formed on past data, whereby to calculate the chances of success.

But a young draught-horse sells for his £30 or £35. His mother does her work, and earns her food—colt or filly, the produce is valuable. A slight blemish will not be so utterly destructive; it may reduce his class, and so his price; but it will not ruin him. He may even be kept for work. Having less blood, he is less liable to accidents; and he begins to earn his keep, if not at two years old, at least he does it at three years old; and, therefore, this must be taken into account. No fear need be entertained, with an increasing population, that the market for this class of horse will ever be much overstocked.

The following may be taken as the mean cost of breeding a cart-horse up to three years old:—

	£	s.	d.
First Year.			
Cost of stallion	2	2	0
Groom's fee	0	2	6
Mare's keep when off work, say 6 weeks, at 3s. 6d.	1	1	0
Foal's grass up to Michaelmas	1	0	0
Colt in straw-yard, with allowance of 1 bushel of oats per week for 20 weeks, at 2s.	2	0	0
Additional allowance of clover in spring	0	5	0
Second Year.			
Grass, 25 weeks, at 2s. 6d.	3	3	0
Colt in straw-yard (as above)	2	0	0
Additional clover	0	5	0
Third Year.			
Grass, 25 meals, at 2s. 9d.	3	9	6
Colt in loose box, 20 weeks	2	0	0
Additional clover	0	7	6
Additional corn	0	16	0
Breaker's time	0	14	0
	£19	5	6

Now, this is perhaps taking the cost at the lowest possible amount; but if a colt so treated is worked the next season, he will amply pay for his feed, and hence it is improper to reckon anything more. And as he would be worth say from £30 to £35, it is quite clear that the owner

would make £10 for his trouble and risk. But let it be ever borne in mind, that horse-breeding impoverishes the land. Horses at all times are a heavy and impoverishing stock; but growing, or young horses, are by far the worst. Something more than a mere return for the labour and outlay should therefore be looked to; there ought to be *profit*, to pay for the risk and deterioration of the soil.

Now, if with this we contrast the breeding of cattle of a useful and valuable kind, say a short-horn, we shall see the relative position of the two breeders. The only difference is, that the breeder of short-horns will sell his produce at two years old, or feed them at two and a half. As it is a question of breeding, however, and not of fattening, we will suppose he sells off his two-year-old stirk, which costs him, for—

	£	s.	d.
Cost of bulling	0	5	0
Cow, seven weeks' feed, whilst dry . . .	1	1	0
Fourteen days' new milk, 4 qrts. per day, 1½d. . .	0	7	0
Twenty weeks' skim milk, 4 qrts. per day, at ½d. .	1	3	4
Hay, cake, and turnips for the same period, at 1d. per day	0	11	8
Grass, first summer	1	1	0
Winter feed on turnips, 20 weeks, at 1s. . .	1	0	0
Cake or artificial food, do. do. say 2 lbs. per day, at ¾d.	0	17	6
Grass, second summer	1	10	0
	£7	16	6

Now, though the price of cows will vary, and especially of a young stirk, still the two-year old should be worth ten guineas; leaving a profit of £2 13s. 6d.; the manure, in both cases, being supposed to compensate for the attendance.

At first sight, this appears to leave a smaller profit than the breeding of horses; it is a profit of nearly three pounds for two year's keep and risk, against a profit, of £10, for three years' keep of the horse;—but with this difference: there is no danger of blemish in the ox—no fear of bad action, or spavin, or ringbone. It will also be observed, that credit is given for the keep of the cow during the period she is dry. It is questionable, however, if this be admissible. She is dry for other purposes than breeding—stoppage of milk, to restore her secretive powers, being required; and if this guinea be added to the profit, it will leave a sum of £3 14s. 6d. for the keeping of a calf for two years, against risk of loss, interest of capital, medicine, and deterioration of soil by *breeding*, instead of *feeding* animals,—a deterioration which must be made up either by the purchase of extraneous manure, or by some system of compensating cropping.

Foals produced from a well-selected mare, by a suitable stallion,

may be used for light work from their third to their sixth year, when they may be sold, so as amply to repay the breeder. It is usual, sometimes, to purchase young colts of good quality at two years old, to rear for sale, in preference to breeding. The advantage of this system is questionable, especially if the cause of its adoption be *deficiency of pasture;* the plan usually adopted by the principal English dealers for making up young horses for sale is to turn them into good grass, taking them up a week or two before they are to be sold, for the purpose of giving them a coat, reducing their carcasses, and teaching them to lead; and it is certain, that to deal in this manner successfully, requires no small amount of knowledge of the animal, and of the tricks to which jockeys are in the habit of resorting.

The age at which a mare should be put to the horse is from three years upwards. Some have injudiciously bred at an earlier age, and disappointment has been the result. Mr. Youatt says, that if the mare has been lightly worked, she may be used for breeding until she is twenty. It is questionable whether breeding from any mare over twelve years at the very utmost, will prove satisfactory. The horse is at his best for breeding at the age of from six to ten. The most favourable time for putting the mare to the horse is from March to the beginning of May: the reason of this is, that the time of foaling will be thus regulated; and the earlier, after the beginning of March, that a mare foals, the more profitable; colts foaled in March are generally found to turn out hardier, and to stand work better, than those foaled later. A mare may with advantage rest for ten days after having had the horse; she may then be worked as usual, reducing the work, however, as pregnancy advances. If she is put to the plough she must have the swingle-tree lengthened one-third to keep the traces from her sides. When the period of foaling approaches, the mare should cease working altogther, and should be turned into the best pasture on the farm; a few weeks' high feeding at this period will not only nourish the foal which she is carrying, but will furnish her with a supply of nutriment for it against its birth. The pasture into which the mare is turned should be provided with sweet water and with shelter; the foal will be the better for running the entire year at the side of its dam.

Mares usually foal so readily that it is superstitiously said to be unlucky to see them foal. Occasionally, however, it is otherwise. Should the mare experience any difficulty in delivery, it is advisable in every case to call in a regularly educated veterinary surgeon, and on no account to permit the quackery of itinerant cow or horse-

doctors, as they style themselves. Many a valuable mare, and many a foal that would have turned out a credit to its breeder, has been thus lost. After foaling, the mare should be turned into a good pasture, well supplied with water and shelter; and if she have foaled early, say in April, and the grass is scanty, let her have a feed or two of oats or of linseed and bean meal daily; if the corn be given in a trough near to the ground, the foal will partake of it along with its dam. As the grass becomes plentiful, the corn may be diminished, or even discontinued. When a mare is kept expressly for breeding, she will be again at heat, and should be put to the horse about six weeks from foaling; she may then also resume light work. At first the foal should be shut up in the stable during working hours; but as it acquires sufficient strength, it may be allowed to follow its dam. The work on which she is employed will contribute to the health of the mother, and increase her flow of milk, and, by accompanying her, the foal will suck more frequently, thrive better, become more *tame*, and will gradually become familiarized with the objects among which it is afterwards to live. Under these circumstances the foal may be weaned at the age of six months. For this purpose it should be either housed, or turned into some pasture or rick-yard at a distance from the dam, and should be liberally fed every morning and evening. Bruised oats and bran are the best description of feeding that could be adopted; towards the end of summer the foal may be turned out to general pasture without fear of again seeking its dam. Too much pampering will prove as prejudicial as neglect, and both should be equally avoided. Should the foal be a male, and emasculation desirable, the period of weaning is a good time to perform the operation. This, however, must not be done if weaning takes place in the months of June or July; the *fly* then abounds,—by its attacks, restlessness, and consequent inflammation, will be promoted, and convalescence retarded. Early spring, or an advanced period of the autumn, are the best periods for this operation. Let no itinerant doctor, or village quack, be the operator, unless you really desire to lose your colt. Call in a regular veterinary surgeon of reputation; leave the operation in his hands, and attend implicitly to his directions as to after-treatment. Indeed, for the sucking foal, scarcely any further after-treatment than simple quiet is necessary; but bleeding and the exhibition of aperients are advisable for a colt of more advanced age. There is now no pecuniary risk attendant upon the emasculation of a horse of any age, as an *insurance* can be effected at a trifling per centage, and most regular veterinary surgeons will themselves be found willing to

entertain the proposal. The French veterinarians have paid great attention to this subject; and M. Goux, of Agar, lays down principles, the result of great experience, of which we give a short analysis. Not that it is to be supposed, that any ordinary breeder will be able to undertake the castration of the foal, from instructions derived from any written treatise. It is a nice and delicate operation, fit only for the hands of the practised and scientific man who has made the anatomy of the horse his peculiar study, and is not to be performed by unskilled hands; many a horse has been ruined by the ruptures, the inflammations, and the diseases brought on by unskilful castration. Tetanus and sloughing are sometimes the harbingers of death, brought on by unscientific practice. These are the results of the experience of M. Goux.

"As a principle," he says, "colts ought to be cut while at their dam's side. This constitutes the rule. The presence of hernia, or the absence of testicles, should cause the postponement of the operation. This constitutes the exception.

"The adoption of castration at the earliest practicable period after birth, is favourable in all points of view; deprivation of the testicles is the object, and this abstracts nothing from the development of the animal; indeed, the conformation becomes improved by it, especially in such horses as are to serve the double purpose of the saddle and draught, or that are intended for the army. Their fore-quarters are rendered lighter by it, their muscular energy in no manner diminished, their character made milder. Their rearing, their breaking, their training, are rendered easier; neither exists there any apprehension of premature fecundation, bastardizing produce and deteriorating breed; nor fear of accidents such as happen with entire colts.

"The preferable method of procedure at the age at which we recommend castration is by ligature. The youthhood of the animal, the little development of the cords, the rudimentary condition of the organs themselves, the simplicity of the means, all conduce to recommend its adoption.

"In the employment of the ligature, prudence dictates procedure by the covered operation (*à testicles couverts*), and the precaution of passing the ligature through the end. By this twofold precaution hernia is avoided, and hemorrhage prevented. The accidents by which it is possible for such an operation to be followed are rare, in consequence, we repeat, of the youth of the subject, and of the simplicity of the proceeding adopted. For the most part, such accidents are easily remediable when they do occur; considering their paucity and their trivial

nature there is no comparison between the method we propose, and the method practised by castrators in general."

The above translation is given in the hope that experiment and investigation may follow. The risk of castration is much less in extreme youth; but it has its disadvantages also.

One thing, however, deserves mention; when a horse is suffered to attain two-thirds of his growth, prior to emasculation, you obtain an animal of far superior form, power, and value, to that which has been operated upon when a foal. It is as well to bear this in mind, as the insurance principle, which has already been alluded to, obviates all risk on the part of the proprietor. But the risk is much greater; and the French principle is by far the safest, as well as the least painful.

STUD MANAGEMENT.—The best hunters, perhaps, in the kingdom, come out of Yorkshire, especially the East Riding; a few remarks on their management, therefore, may be interesting and useful.

The first essential for breeding sound "blood" horses is to have a regularly kept stud of brood mares, whose duties shall be simply confined to the *breeding*. These should be carefully selected both for form and blood, and as they have no other duty to perform, they should be chosen and retained with a view to that alone. The second essential required is a dry and bracing but not bleak atmosphere, with the paddocks thoroughly under-drained. The third essential is, that the stables and boxes are well arranged, both as to aspect and ventilation. Counties where the atmosphere is moist, and where fogs prevail, are altogether unfit for a breeding stud.

As a general rule, any gentleman commencing a breeding establishment, will avail himself of such accommodation as he possesses, but it will generally happen that a trifling alteration, made with judgment, will improve the existing arrangements. The buildings of a breeding-farm should be surrounded with small paddocks, lying, if possible, to the south of the stables, so as to secure a southern exposure. The paddocks, being chiefly required for exercise, need not be large, but they should be free from holes, and the fences should be of such a description as to render accidents impossible. The buildings, whether boxes or hovels, should be perfectly dry and well ventilated; the doors should be four feet wide, and so formed as to prevent mares in foal from injuring themselves,—rollers on each door-cheek, covered with canvas, is a useful precaution here. Attached to the buildings, and in the quietest part, one or more boxes, according to the extent of the establishment, should be set apart for mares to foal in, which

should not be less than sixteen feet square; and these foaling-boxes should be placed near the inhabited parts of the stable. When this is attended to, and brood mares carefully selected, both for form and blood, the primary considerations are fulfilled. The mare has seldom any other duty to perform in a well-ordered breeding establishment; she ought to have none. It is true a brood mare is often used as a hunter for a couple of years; but as her work as a breeder requires very different treatment, and withal much less costly keep, she is seldom kept up or fed on hard food. During the period of gestation, she is usually absolved from every kind of work, and some breeders go so far as to use unbroken fillies for the purpose of brood mares. This is, however, rarely the case; too often some blemish or accident leads to her being put to the horse. When mares are purchased for breeding purposes, the usual age to commence breeding is five years old, and some mares will continue to breed till they are sixteen or even twenty years old. If they fail to produce in two successive years they are usually considered useless and barren.

The choice of a stallion is by no means either a matter of chance or caprice with the Yorkshire breeder. He is nice in his discrimination, and, as thorough-bred entire horses are not always travelled, he often sends a mare to the stables of the stallion-keeper, for six or nine weeks in the season, at board wages, until the impregnation has been successful. Five or ten guineas are often given for a cover, as well as a handsome fee to the groom, and a good price also for her keep in the stable. The stallion is, like the mare, selected not only for form and action, and pedigree, but also for the *character of his stock*. Some horses are the sires of a long list of absolute winners. There were more and better horses produced from Old President than, perhaps, from any horse of his day. By all sorts of names they seemed to be more or less excellent. He was a patriarch in horse-producing; and to have it said that a horse was out of a "President mare" was at once a guarrantee of action, of bottom, and of quality.

The covering usually takes place in April or May, and as the mare goes eleven months with young, she may be reckoned a month backwards to ascertain her period of foaling. With blood horses the period of birth is of consequence, as they are reckoned by years, at whatever period they are foaled,—thus, on the first of January, 1852, the foal dropped in May or June, 1851, is a year old, and hence February or March are months when the season of the mare is frequently anticipated by artificial feeding. For this purpose a quart of hemp-seed is sometimes said to be given, night and morning, for a

week, or ten days. In some instances the mere trial by the horse is a provocation of desire.

During the period of gestation the mare is always turned out, and usually at first runs in an ordinary seed field or pasture. At Michaelmas she will require either housing or sheltering, and artificial food of some kind is invariably given. On most farms the shelter of a horse-box, or cow-house without stalls is used, with a feed of corn each night and morning, and a little hay out of doors when the snow is on the ground, or when the weather is unusually cold; but the best breeders have their fields divided into paddocks, of say two to three acres each, with boxes or houses attached. A well drained field, on a southern acclivity, with a warm hedge-wall, or, what is better, a fence to the north and east, made of gorse faggots, and divided by paling or boarding, or even by the same sort of fence, and furnished with a brick or gorse-built square loose box for shelter, will make an excellent breeding paddock.

These paddocks are all mown very early in July, and the fog or after-grass is unbroken. Into this the mare is turned, or a pair of mares together, when the pastures fail, in October or November. To this long grass a very small feed of corn per day is added, and when one or other is expected to foal, they are separated into adjoining paddocks, where they can hear and even see each other. This is the period when there is danger of abortion occurring; the eye of the owner should, therefore, be constantly on the mare, after her fifth month of gestation. Moderate exercise and good feeding are about the best preventives.

Mr. Youatt observes that the *imagination* exercises a powerful influence on mares, and therefore directs that when liable to abortion they should not be kept with others that have gone to the fifth or sixth month, lest her example should infect them with the disease. We have also reason to believe that abortion in mares is sometimes epizootic.

As the period of parturition approaches, a keen eye should be kept on the mare. It is generally indicated by waxy matter on the teats, by a loosening of the vagina, and uneasiness and restlessness are still more unequivocal symptoms; and, when these appear, she requires to be sat up with all night, by a trusty, practised, and intelligent groom. It has been said that no one ever saw a mare in the act of foaling, and some are so superstitious as to close the door lest they should witness the act. The last act, if all be right, is certainly rapid, and help is seldom needed. But, if assistance be necessary, it

should be rendered quietly and promptly, and the foal pulled, not by the legs, but as much as possible by the head. Violence of all kinds should be studiously avoided, for of all animals the mare who has had regular exercise is the least likely to suffer from parturition, and the most likely to suffer from violence.

For the first few weeks after foaling, shelter, bran mashes, and warm food, are assiduously given. The foal should be watched with great attention, and if he does not, soon after being dropped, attempt to raise himself up, a little milk is drawn, and administered by the spoon. In young mares, this must be done with the greatest care and caution; and some will require the exercise of much coaxing and patience before they will allow the foal to suck—while, at the same time, the foal is probably too weak to make any very vigorous efforts.

The foal will soon begin to eat. The young grass of spring and an idle mother's milk, which the Yorkshire breeder of hunters always affords to the foal, pushes it vigorously on; and when very valuable horses are bred, the separate or paddock system is still adopted. If the foal is a colt, no pains, expense, nor trouble, is grudged,—if a filly, it is allowed to herd with the other filly foals in the worst pasture, and thus it takes its chance.

The weaning is a critical time. The foal should be confined in a loose box, and the mother taken away to a poor pasture, to facilitate the dispersion of the milk, and to keep the mother and foal from the reach of each other's voices. The foal should be liberally fed with hay and oats, and kept comparatively still and dark; and, by kindness and attention, it soon forgets its parent. It now joins its fellows in a field or paddock; but for the first winter it is usually fastened up in a house by itself at night; or a pair are put together for company, which are let out during day time; a plentiful allowance of hay, cut clover, oats, and carrots being given, but no attempt made at increasing its growth. A little linseed is often added with great advantage.

In the first summer they leave the paddocks and graze in a seed pasture, or on old sward, and if ever it becomes hard or deficient, a moderate allowance of oats is invariably given. In the second winter, shelter, out-door feeding during the day, and a liberal supply of clover, hay, or corn, are given.

To recapitulate: amongst the great secrets of the Yorkshire stud management, and the causes of their success in breeding horses, the following particulars may be named:—

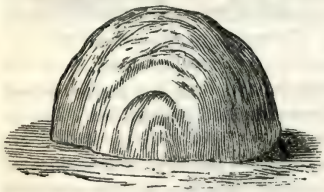
The greatest care is taken to have brood mares specially selected, and kept for that purpose, and having those conformations, blood, and

qualities, calculated to produce the best stock. Above all, youthful vigour is required, if good stock is looked for.

The most critical and minute attention is paid to the selection of a stallion most suitable to the mares, and one which has obtained a character for being the *sire* of good hunters, and having the power to transmit his qualities, and having moreover those *points* in perfection in which the mare is deficient.

The great care, food, and the shelter afforded to the mare during the period of gestation, and the abundant supply of succulent food in all stages of her connection with the foal, especially when sucking, is the chief source of the excellence in the produce. The careful manner in which the hay is made in Yorkshire, has also a very material influence on its nourishing qualities, and therefore its fitness for food. Mr. Milburn, in his Prize Essay, addressed to the Royal Agricultural Society of England, thus sums up the Yorkshire modes of hay-making. He says:—

"A small portion is usually mown, turned assiduously, and always placed in lap-cocks, *i. e.*, raked into small heaps of the dimensions just capable of being taken up in the arms and then shaken, so as to present an even surface; it is folded round by the arm, and so doubled, and set down firmly on the ground, where it remains, until another favourable day, when they are again thrown out and exposed to the sun; this is repeated until the whole is fit for 'pike,' or conical heaps, containing from half a ton to a ton. These, after undergoing an incipient sweating or fermentation, are combined in a stack where they again undergo fermentation, which imparts a grateful and peculiarly rich aroma, besides giving to the hay its nutritive character, which enables cattle to get fat upon it alone, without any other food." The influence of lime on some of the soils, as regards productive qualities, he says, is quite extraordinary:—"The lime is of the purest possible character, and the effects produced by its application, even upon those grass-lands lying immediately upon the limestone, cause coarse benty grasses to disappear before it, and give place to the rich and thick-set white clover,—even where no seed has been sown; these effects are not easily accounted for, except on the hypothesis that the seeds exist in the soil in a condition unfavourable to germination, and that they are



HAY "LAP-COCK."

stimulated by the external application of the lime. Whatever may be the cause, there is no doubt whatever of the fact."

In the East Riding there is less grass land, and the clovers and artificial grasses are more generally made into hay.

"We are not aware," says Mr. Milburn in the same essay, "that this mode is carried on in any other part of the kingdom as it is in the North Riding of Yorkshire. So soon as the surface is dry, a portion, about a yard in length, of the swath is taken, and the surface folded inwards, and the whole rolled into a kind of cone. A piece of rye-grass is pulled out of the top and tied round the head of the 'ruckles,' as they are called, which are then set in rows to admit of their being easily carted. Thus, while the sun and air thoroughly dry the whole mass, the rain, should it come, descends over the inclined surface of the cone, and as the large mass of leaves the clover possesses renders it peculiarly liable to injury from the wet, this process is most valuable, and in few places is it secured in better condition. In a dry hay-time it is carted directly from the 'ruckles' to the stack; in a wet season, they are sometimes pulled down before they are carted off, and made into 'pikes', or small heaps, of from two to three cart-loads each; here the clover is allowed to ferment, and in a week or two it is put into the stack."

CLOVER "RUCKLE."

Besides the abundant shelter and nourishing food afforded to young horses in every period of their growth, their out-door life combines to assist the full development of the Yorkshire hunter, and forms an important feature in the Yorkshire stud management.

Nature has adapted the eastern and western moorlands of Yorkshire in a remarkable manner for the training of race horses. The training ground of Hambleton on the former, and Middleham and Richmond on the other, are such as can seldom be found elsewhere. Cool in the hottest summer, level as a bowling-green, covered with soft, fine, short, mossy grass, a cover of soil so thick as not to give way under the horses' feet, yet sufficiently soft and pliable to prevent injury, they present advantages perhaps unequalled in any other part of the country.

The fairs of Howden, of Beverley, and of North Allerton, are as

celebrated for sound, excellent, and valuable horses, as those of Yarrow and Thirsk are for these other productions of the county—the Yorkshire short-horns.

CHAPTER XII.

HORSE TAMING AND ITS SECRETS.

THE principal danger and inconvenience attendant upon vice in a horse, consists in the difficulty of approaching, securing, handling, or dressing him. The situations in which the vicious animal is found require to be considered separately—viz., in the stable, fastened to the manger, saddled, harnessed, or naked, and at liberty. Before approaching any horse, it is necessary to form some sort of judgment of his moral character, and this will be gathered from his physiognomy and gesture, with far more certainty than from the reports of those about him. If the eyes be wild and threatening, if rapid glances be thrown around, if the ears be thrown backward and the tail slightly moved,—be cautious not only how you approach, but how you quit him. If you approach a horse in the stable, never do so abruptly, but first speak to him firmly but gently, and order him to "*bout*," or "*come over*." If he obey, and move to one side, you may approach up close to his shoulder, taking the halter in your hand the moment you arrive there. If his head be then kept down, he can do no mischief, especially if the right hand be laid on the horse's shoulder, and the body extended so as to keep at a sufficient distance from the forelegs. While thus held, the horse may be barnacled, blinded, muzzled, hobbled, or, in short, done anything with you please. If a vicious horse have his eyes bandaged, and be rapidly turned round a few times, he will become passive, and this plan has succeeded where all other means have failed. Never approach a horse on the *right* side; it is from this side he *kicks*.

The power human beings possess over all the lower creation, appears in all their movements. The human *eye* seems to possess a talismanic influence, like that said to be exercised by a serpent on some kinds of birds. It strikes terror, and awes into subjection. The *voice* will scare away the boldest and most savage denizens of the forest, while a firm and determined bearing will often arrest the most viciously inclined, or subdue the most obstinate. The horse,

especially, is an excellent judge of men's dispositions and tempers. He hates and fears, and often inflicts summary vengeance on the ill-tempered, the passionate, and the revengeful. He also has his affections—and the docility, the patience, and the friendship he often exhibits, are models worthy of the imitation of many who consider themselves civilized men.

One or two instances of persons possessing unusual power over horses are on record. One is related of a trainer who was in the habit of purchasing all the supposed irreclaimably vicious horses he could hear of, if otherwise promising, and these, in an incredibly short space of time, he would produce thoroughly tamed, and as quiet as so many lambs. The secret was a simple one: the trainer had a *leaden knob* at the end of his whip, and with this he struck the animal on the nape of the neck every time it kicked, plunged, or showed any sign of vice. This came on the creature like an electric shock; and being struck on a part so sensitive, it soon ceased to resist, and stood for a moment as if stunned. The trainer then caressed it, spoke to it coaxingly, and gradually succeeded in bringing it to do all that he required. By thus alternately using severity and kindness, he succeeded, not only in rendering two stallions docile, but also in subduing a number of other fiery, untameable animals, which he purchased almost for nothing. Many a vicious horse has also been tamed by being ridden furiously over heavy ploughed land, until his strength was perfectly exhausted. In Germany, it is a common practice to suspend furious horses in a frame until their strength is exhausted. Starvation, bleeding, narcotics, have severally been tried with a view to taming a vicious horse: these remedies will, however, generally be found to have only a temporary effect, and they are more or less calculated to prove prejudicial to the animal's health. Moreover, they are savage and brutal modes, and are destitute of intelligence and skill; but extraordinary powers of horse-taming are possessed by some individuals. The following is from the pen of Mr. Castley:—"When a young man, I remember purchasing a horse at a fair in the north of England, that was offered very cheap, on account of his being unmanageable. It was said that nobody could ride him. We found that the animal objected to have anything placed on his back, and that when made to move forward with nothing more than a saddle on, he instantly threw himself down on his side with great violence, and would then endeavour to roll upon his back. There was at that time in Yorkshire a famous colt-breaker, known by the name of JUMPER, who was almost as cele-

brated in that country for taming vicious horses into submission, as the famed WHISPERER was in Ireland. We put this animal into Jumper's hands, who took him away, and in about ten days brought him home again, certainly not looking worse in condition, but perfectly subdued, and almost as obedient as a dog; for he would lie down at this man's bidding, and only rise again at his command, and carry double or anything. I took to riding him myself, and may say that I was never better carried for six or eight months, during which time he did not show the least vice whatever. I then sold him to a Lincolnshire farmer, who said that he would give him a summer's run at grass, and show him as a very fine horse at the great Horncastle fair. Happening to meet this gentleman on the following year, I naturally enough inquired after my old friend. 'Oh,' said he, 'that was a bad business: the horse turned out a sad rebel. The first time we attempted to mount him, after getting him up from grass, he threw the man down with the greatest violence, pitching him several yards over his head; and after that he threw every one that attempted to get on his back. If he could not throw his rider, *he would throw himself down.* We could do nothing with him, and I was obliged at last to sell him to go in a stage-coach.' "

Another case is that of SULLIVAN, the celebrated Irish horse-tamer, whose peculiar method of effecting the desired end, procured for him the title of the "WHISPERER." The following notice of this remarkable person appears in Townsend's "Survey of the County of Cork:"— "James Sullivan was a native of Cork, and an awkward, ignorant rustic of the lowest class, generally known by the appellation of the Whisperer, and his profession was horse-breaking. The credulity of the vulgar bestowed that epithet upon him, from an opinion that he communicated his wishes to the animal by means of a whisper, and the singularity of his method gave some colour to the superstitious belief. As far as the sphere of his control extended, the boast of *veni, vidi, vici,* was more justly claimed by James Sullivan than by Cæsar or even Bonaparte himself. How his art was acquired, or in what it consisted, is likely to remain for ever unknown, as he has left the world without divulging it. His son, who follows the same occupation, possesses but a small portion of the art, having either never learned the whole secret, or being incapable of putting it in practice. The wonder of his skill consisted in the short time requisite to accomplish his design, which was performed in private, and without any apparent means of coercion. Every description of horse, or even mule, whether previously broke or unhandled, whatever their peculiar

vices or ill habits might have been, submitted, without show of resistance, to the magical influence of his art, and, in the short space of half an hour, became gentle and tractable. The effect, though instantaneously produced, was generally durable; though more submissive to him than to others, yet they seemed to have acquired a docility unknown before. When sent for to tame a vicious horse, he directed the stable in which he and the subject of his experiment were placed to be shut, with orders not to open the door until a signal was given. After a *tête-à-tête* between him and the horse for about half an hour, during which little or no bustle was heard, the signal was made, and on opening the door the horse was seen lying down, and the man by his side, playing familiarly with him, like a child with a puppy dog. From that time he was found perfectly willing to submit to discipline, however repugnant to his nature before. Some saw his skill tried on a horse which could never be brought to stand for a smith to shoe him. The day after Sullivan's half-hour lecture, I went, not without some incredulity, to the smith's shop, with many other curious spectators, where we were eye-witnesses of the complete success of his art. This, too, had been a troop-horse, and it was supposed, not without reason, that after regimental discipline had failed, no other would be found availing. I observed that the animal seemed afraid whenever Sullivan either spoke or looked at him. How that extraordinary ascendancy could have been obtained, it is difficult to conjecture. In common cases this mysterious preparation was unnecessary. He seemed to possess an instinctive power of inspiring awe, the result, perhaps, of natural intrepidity, in which, I believe, a great part of his art consisted; though the circumstance of the *tête-à-tête* shows, that upon particular occasions something more must have been added to it. A faculty like this would, in other hands, have made a fortune; and great offers had been made to him for the exercise of his art abroad; but hunting and attachment to his native soil were his ruling passions. He lived at home in the style most agreeable to his disposition, and nothing could induce him to quit Duhallow and the foxhounds."

To resume. Some years since I met with a person named O'Hara, whose performances I can affirm to have been truly wonderful, and very similar to those described as having been performed by Sullivan. Whether O'Hara was acquainted with Sullivan's secret or not, I cannot say; but he seemed, at all events, able to produce equally surprising effects. On one occasion, when under the influence of liquor, O'Hara was heard to declare that *his* secret lay in *rocking* the

horse; but on another occasion, when equally tipsy, he spoke of *biting* the animal's ear or lip, I forget which, but think it was the former.

The following anecdote is related of Sullivan by Mr. Castley:—"At the spring meeting of 1804, Mr. Whaley's KING PIPPIN was brought on the Curragh of Kildare to run. He was a horse of the most extraordinary savage and vicious disposition. His particular propensity was that of *flying at* and *worrying* any person who came within his reach; and, if he had an opportunity, he would get his head round, seize his rider in the leg with his teeth, and drag him down from his back. For this reason, he was always ridden with what is called a *sword*, which is a strong flat stick, having one end attached to the cheek of the bridle, and the other to the girth of the saddle—a contrivance to prevent a horse of this kind from getting at his rider.

"King Pippin had long been difficult to manage, and dangerous to go near, but on the occasion in question he could not be got out to run at all. *Nobody could put the bridle on his head.* It being Easter Monday, and consequently a great holiday, there was a large concourse of people assembled on the Curragh, consisting principally of the neighbouring peasantry; and one countryman, more fearless than the rest of the lookers on, forgetting, or perhaps never dreaming that the better part of courage is discretion, volunteered his services to bridle the horse. No sooner had he committed himself to this operation, than King Pippin seized him somewhere about the shoulders or chest, 'and,' says Mr. Watts (Mr. Castley's informant), 'I know of nothing I can compare it to so much as a dog shaking a rat.' Fortunately for the poor fellow, his body was very thickly covered with clothes, —for on such occasions an Irishman of this class is fond of displaying his wardrobe, and if he has three coats at all in the world, he is sure to put them all on. This circumstance, in all probability, saved the individual who had so gallantly volunteered the forlorn hope. His person was so deeply enveloped in extra integuments, that the horse never got fairly hold of his skin, and I understand that he escaped with but little injury, beyond the sadly rent and totally ruined state of his holiday toggery. The Whisperer was sent for, who, having arrived, was shut up with the horse all night, and in the morning he exhibited this hitherto ferocious animal following him about the course like a dog—lying down at his command, suffering his mouth to be opened, and any person's hand to be introduced into it; in short, as quiet almost as a sheep. He came out the same meeting, and won his race, and his docility continued satisfactory for a considerable

time; but, at the end of about three years, his vice returned, and then he is said to have killed a man, for which he was destroyed."

Some time ago, an article in connection with the subject of horse-taming appeared in the *Times* newspaper, in which allusion was made to Mr. King, proprietor of the Learned Horse, then exhibiting in London, and it was stated that Mr. King professed that his art depended on the *compression of a certain nerve* in the horse's mouth, called "the nerve of susceptibility."

The secret of Sullivan's summary mode of taming the horse is likely for ever to remain a mystery; but it is certain that a power little removed from his is attainable by a very simple process. That Sullivan's son, however, either had not inherited the secret from his father, or was unable to put it in practice, is evident from the many failures which attended his attempts. Amongst others, the following is from Mr. Castley's account:—"We had in the regiment a remarkably nice horse called Lancer, that had always been very difficult to shoe; but seven or eight years ago, when we first got him, he was downright vicious in that respect. When the regiment was stationed in Cork, the farrier-major sought out the present Sullivan, the son of the celebrated Whisperer, and brought him up to the barracks, in order to try his hand upon Lancer, and make him more peaceable to shoe; but I must say this person did not appear to possess any particular controlling power over the animal more than any other man. Lancer seemed to pay no attention whatever to his charm, and at last fairly *beat him out of the forge.*"

An account published some years ago by Mr. Catlin, whose experience among the American Indians has obtained for him so much celebrity, bids fair, partially to solve the mystery, or at least to suggest some important inferences. He thus describes the mode in which the Indian tames the wild horse:—"He coils the *lasso* on his arm, and gallops fearlessly into the herd of wild horses. He soon gets it over the neck of one of the number, when he instantly dismounts, leaving his own horse, and runs as fast as he can, letting the lasso pass out gradually and carefully through his hands, until the horse falls for want of breath, and lies helpless on the ground. The Indian advances slowly towards the horse's head, keeping the lasso tight upon its neck, until he fastens a pair of hobbles on the animal's two fore feet,—when he loosens the lasso, giving the horse a chance to breathe,—and passing a noose round the under jaw, by which he gets great power over the affrighted animal, that is rearing and plunging when it gets breath, and by which, as he advances hand over hand

towards the horse's nose, he is able to hold it down, and prevent it from throwing itself over on its back. By this means he gradually advances until he is able to place his hand on the animal's nose, and over his eyes, and at length to *breathe into his nostrils*, when it soon becomes docile and conquered, so that he has little else to do than to remove the hobbles from its feet, and lead or ride it to the camp. The animal is so completely conquered that it submits quietly ever after, and is led or ridden with very little difficulty."

Mr. Youatt, in his excellent volume on the horse, gives the following interesting note:—"Mr. Ellis, B.A., of Trinity College, Cambridge, happened to read this (Mr. Catlin's) account, and he felt a natural desire to ascertain how far this mode of horse-taming might be employed among British horses. He soon had the opportunity of putting the veracity of the story to the test. His brother-in-law had a filly, not yet a year old, that had been removed from her dam three months before, and since that time had not been taken out of the stable. A great amateur in everything relating to horses was present, and at his request it was determined that the experiment of the efficacy of breathing into the nostrils should be immediately put to the test. The filly was brought from the stable, the amateur leading her by the halter. She was quite wild, and bolted, and dragged the amateur a considerable distance. He had been using a short halter; he changed it for a longer one, and was then able to lead the little scared thing to the front of the house.

"The experiment was tried under manifest disadvantage,—for the filly was in the open air, several strangers were about her, and both the owner and the amateur were rather seeking amusement from the failure, than knowledge from the success of their experiment.

"The filly was restive and frightened, and with great difficulty the amateur managed to cover her eyes. At length he succeeded, and *blew* into the nostrils. No particular effect seemed to follow. He then *breathed* into her nostrils, and the moment he did so, the filly, who had very much resisted having her eyes blindfolded, and had been very restive, stood perfectly still, and trembled. From that time she became very tractable. Another gentleman also breathed into her nostrils, and she evidently enjoyed it, and kept putting up her nose to receive the breathing.

"On the following morning she was led out again; she was perfectly tractable, and it seemed to be almost impossible to frighten her. A circumstance which, in a great measure, corroborated the possibility of easily taming the most ferocious horses, occurred on the next day.

A man at a neighbouring farm was attempting to break in a very restive colt, which foiled him in every possible way. After several manœuvres, the amateur succeeded in breathing into one of the nostrils, and from that moment all became easy. The horse was completely subdued. He suffered himself to be led quietly away with a loose halter, and was perfectly at command. He was led through a field in which were four horses that had been his companions; they all surrounded him; he took no notice of them, but quietly followed his new master. A surcingle was buckled on him, and then a saddle. and he was finally fitted with a bridle. The whole experiment occupied about an hour, and not in a single instance did he rebel.

"On the next day, however, the breaker, a severe and obstinate fellow, took him in hand, and, according to his usual custom, began to beat him most cruelly. The horse broke from him, and became as unmanagable as ever. The spirit of the animal had been subdued, but not broken."

That simple breathing can have any influence, except perhaps one slightly sedative, seems incredible. The animal and the man both possess the power of burning carbon in the lungs. They both create the poisonous carbonic acid gas. It is possible that by breathing this gas again into the lungs of a spirited horse, beating rapidly and high with fire and courage, they may become loaded and heavy—may feel the sensation of choking by the fumes of charcoal; and so the animal's courage may be cooled so much as to tame his vicious propensities. And even this temporary sense of his inferiority may exercise an influence on his subsequent character for life. But if a daring courageous man had energy and determination enough to approach a vicious horse so near as to breathe into his nostrils, might not that act alone convince the horse of his subjugation to mental and moral power, and so subdue his vices and vicious propensities? To this, or some such principle, may be attributed the taming of the vicious horse, and the influence applicable to the quieting of a horse may be found equally efficacious for a donkey!

To mental and moral power is the taming of all animals much more attributable than to the material. There can be no doubt that the wonderful acuteness, discrimination, and almost reasoning powers possessed by the horses of the Circus are mainly owing to the training of their *intellects*, though a painfully revolting feeling associates itself with the consideration caused by reflecting on the cruelties attending their education.

CHAPTER XIII.

VICES AND THEIR REMEDY.

INDEPENDENTLY of ordinary and general restiveness, there are certain *vices*, peculiar to individual horses, of a very annoying character, and productive of very unpleasant consequences both to the animal and his owner. But RESTIVENESS is, after all, the great and giant evil of horses. It sometimes manifests itself by the animal standing stock-still, sometimes by backing, and sometimes by rearing instead of taking the weight. Generally the cause of it is, they are spoiled by their breakers. Sometimes a farmer will breed his draught-horses with a strain of blood, in which cases they have too much spirit for a steady dead pull. Generally, however, it is violent and brutal treatment in breaking which ruins the horse. Sometimes they are restive in riding. On this the author of "Hints on Horsemanship" says—"A common error, both in theory and practice, exists with regard to the restive horse. He is apt to rear sideways against the nearest wall or paling. It is supposed that he does so with a view of rubbing his rider off. I do not give him credit for intellect sufficient to generate such a scheme. It is that, when there, the common practice is to pull his head *from* the wall. This brings the rider's knee in contact with it; consequently, all further chastisement ceases, for were the rider to make his horse plunge, his knee would be crushed against the wall. The horse, finding this, probably thinks it is the very thing desired, and he will always again fly to a wall for shelter. Instead of *from* the wall, let the rider pull his head *towards* it, so as to place *his* eye, instead of your eye, against it; continue to use the spur, and he will never go near a wall again."

CRIB-BITING.—This very disagreeable vice has been pronounced in a court of law to constitute unsoundness. It consists in a violent extension of the neck, an attempt to grip the manger with the teeth, and, with a convulsive action of the throat, a sucking-in of the air. Crib-biting is decidedly *infectious*,—for one horse will, to a certainty, contract the habit from any other who possesses it, if placed in the stall next to him. The effects of this vice are serious. Besides the injury to the teeth, and the waste of corn (for the horse will usually bite with a full mouth), much loss of *saliva* takes place, by which digestion is, of course, impaired; *flatulence* is also produced by the inhalation of air, and a crib-biting horse is never so well up to his work as another.

Many remedial measures have been tried, but to little or no purpose. Among these are, covering the edge of the manger with iron, with sheep-skin, with tar, or with aloes; a strap round the throat has also been recommended,—it cures crib-biting, but usually produces, if possible, a worse affection, viz., *roaring*.

Turning out to grass for a few months commonly succeeds with young horses; and Maxwell says that he had horses cured by turning them into loose boxes. Youatt recommends a muzzle with bars across the bottom, sufficiently wide to allow the horse to get at his corn, but sufficiently close to prevent his getting hold of the manger. Perhaps the advice whispered in the ear of Nimrod, by an old sportsman, is the best we can give—"Never buy a crib-biter, he is always getting worse;" to this we may add,—if you have one, get rid of him.

Wind-sucking.—The horse bends his neck, draws his head inward and downward, and *sucks* in the air. The effects are the same as those produced by crib-biting. I have induced several persons, whose horses were affected with this nasty vice, to try Mr. Youatt's remedy, and it has been invariably found successful. It consists in attaching to the head a leathern strap, with spikes pointing towards the neck. When the horse draws in his head, preparatory to sucking, the spikes prick his neck, a new and sudden impulse is given to his ideas, and the attempt at inhalation of air is abandoned.

Shying.—This vice, which will often occasion the unseating of the best rider if taken in an unguarded moment, proceeds from several causes, and upon the individual cause the curative treatment must depend. If the cause be imperfect sight, gentleness and coaxing are necessary. The use of whip or spur will only make matters worse; but if the horse be treated with gentleness, and coaxed up to examine the object which terrified him, he will soon learn to place confidence in his rider, and his shyness will gradually disappear.

If the cause be mere skittishness, or *affectation*, severity is also objectionable. Keep the *mouth* well under command, ride on without more notice of the matter than an occasional touch with the spur; and when the animal perceives that his pretended fright has failed to elicit any notice, he will soon tire of his performance.

If the cause be *inexperience*, the being unacquainted with the many new objects the animal encounters, the remedy is the same as that just described, always feeling the mouth gently, remembering to avoid all harshness, and to treat the animal precisely as you would a timid child.

Mr. Laurence says—"These animals generally fix on some parti-

cular shying butt; for example, I recollect having, at different periods, three hacks, all very powerful; the one made choice of a windmill for the object or *butt;* the other a tilted waggon, and the last a pig led in a string. It so happened, however, that I rode the two former when amiss from a violent cold, and they paid no more attention to either windmills or tilted waggons than to any other objects, convincing me that their shying when in health and spirits was pure *affectation*—an affectation, however, which may be speedily united with obstinacy and vice. Let it be treated with marked displeasure, mingled with gentle but decided firmness."

The horse will sometimes prove restive and obstinate when mounted by a strange rider—by one with whom he is unacquainted. If the party be unused to riding, he had better give up the attempt; but if he possess a knowledge of the art of *sitting a horse*, he may speedily let the animal know that he is his master, and it is astonishing what an amount of *respect* this will produce. A few masterly touches will usually sober a horse at once.

KICKING THE POST.—Another vice of the horse is *kicking the post* of the stable, and sometimes the wall itself: or a low manifestation of the same tendency is stamping in the stable. It often originates in the horse having itching humours in the feet; it may commence at a period in life when it soon becomes a habit, and not only destroys the fittings of the stable, but injures their own feet and disturbs the rest of other horses. If cured at all, it must be at the first manifestation. Let the foot and leg be well examined to see there is no heat, itching, or cause of irritation. Take off the shoe, and foment well with hot water—the hand being the criterion of its proper heat—and give a ball; a little blood may be abstracted; and, as soon as fit, put the horse to work, in the plough if possible, or on the grass; and double or treble the exercise if he be an idle horse. As it is usually one leg only on which he strikes, let the stable post be well covered with dry whins. This will often be a cure, a ready correction of the fault, and also a deadener of the sound. If this does not succeed, remove the post of the stable on the kicking side, three or four feet nearer to the head, and leave the remaining stall unoccupied. Such horses are always best in a loose box, and, though this will not cure the tendency, it will be an alleviation. A horse will sometimes kick until he breaks his own leg, so intense and determined is the mania.

BITING.—Some horses are addicted to biting; and no wonder. They are teased and irritated till they begin it in play, and at last acquire it in earnest. For this, when established, there is *no cure*. You may

correct and coax, and correct again; but correction is of no use. A resolute, determined, firm-handed groom, will sometimes overcome it at the first manifestation; but if it once becomes a habit, it is irremediable. Hard and constant work will alleviate it; but a horse once a biter is never safe.

Kicking is another still more dangerous vice—only there is generally some indication of it before it comes. A kicker should never be approached but by his own groom. A bold stand, close to the horse, will diminish the severity of the blow, and it is said no horse will kick if you have *firm* hold of his tail. A mild, gentle treatment, will often accomplish what severity will not. Horses should never be approached without being spoken to, and never while they are eating their corn. If a horse is a confirmed kicker and must be kept, a door may be opened in the stable so as to approach by the head. It is dangerous, however, to have such a horse in a stable at all.

Wasting the corn is the last vice to which allusion will be made here. Some horses are in the habit of actually throwing it out of the manger with their noses. A few cross-bars over the manger will usually remedy this; and if they gulp down great mouthfuls from mere greediness, the corn should be spread as thin as possible over the manger. The horse will sometimes waste chaff in search of the oats, but the best mode is to give *crushed* oats mixed with clover chaff.

CHAPTER XIV.

PREVENTION OF DISEASES ARISING FROM MISMANAGEMENT.

That it is better to prevent disease than to cure, is a truism so applicable to every evil of life, as to have run into a proverb having all the force of a self-evident truth. But that the prevention of disease is *easier* than the cure is equally correct. Disease is a derangement, either of the functions of the system, or a disorganization of these organs themselves. Hence all diseases must have a cause. It may be a constitutional tendency in the animal itself, a weakness or a defect, or it may arise from mismanagement. The latter is nearly always the case. There may be some weakly horses with diseased tendencies, but these generally arise from hereditary defect, or from mismanagement of the mother or offspring, in gestation or infancy. But by far the greatest amount of diseases arise from the reckless

mismanagement applied to the animals themselves. A few of these may be mentioned:—

One of the causes of disease, and indeed a very unsuspected one, is the lead imbibed in drinking, from the passage of their water through much lead pipeing. Mr. Cuming, V.S., of Edinburgh, found a most remarkable and intractable disease prevalent, resembling staggers or head disease. Animals well at one period would be dead in thirty to thirty-six hours. In twelve years, fifty fatal cases occurred in a circuit of three miles. He opened one of the subjects which had resisted all the influence of his medicines, and a quantity of carbonate of lead, in small particles, was found in the stomach. He had some of the subjects which had been interred, exhumed, and the same cause of disease was apparent there also. The animals so diseased have a tendency to eat bones, rags, bricks, tiles, &c. From this it is evident greater care is necessary in conducting water than is generally considered needful, especially as it is found that the softer and purer the water, the more is the lead pipe decomposed and rendered dangerous. Of all conductors perhaps *glass* will now be found the least objectionable, if not the cheapest medium.

A diseased appetite is often first induced by over-confinement. The horse when at liberty will eat the grasses to the very root. With them he imbibes the alkaline soil; but if he never passes out of the stable, he needs some such substance, and hence he will begin to gnaw the stalls, the mangers, and the gates,—a tendency quite distinct from crib-biting, but often productive of it. Nothing is more refreshing to a horse than a run in a fallow field, nor anything more conducive to health than occasional liberty. This should be systematically afforded to all horses, even the most carefully groomed and artificially attended.

The use of salt in dietetics is most sadly neglected. Some parties run to the opposite extreme, and mix salt in some given proportion with all their food. Now, depraved and perverted as many of the instincts of the horse have become from domestication, still it is by far the best teacher of the quantity of this material necessary for health. Let him have a block of rock salt in his manger, and he will soon find it out and take as much as he pleases. It will keep the stomach in tone, and vastly promote health.

Great care and caution are necessary in the changes of food. A horse taken up from the soft grass of autumn, is often put to barley straw. It is a new pabulum. The horse eats his fill, nay, even greedily,—the stomach has a new duty to perform. It refuses to act.

The horse begins to be uneasy—to paw—to lie down and get up—to look at his sides. He is supposed to have gripes, and cholic medicine is given. He gets no better,—inflammation sets in, and he dies.

The veterinary surgeon is the only person who ought to be intrusted with his case. But the stomach must be emptied. Injections are always safe, and generally successful. They give time, keep off inflammatory action, relieve pain, and wash out the indigestible matter.

Another similar cause of disease is allowing the horses to have free access to the chaff of the winnowing machine. This is often blown out of doors into a garth or paddock. The horse eats his fill of this new food, and the same sad consequences we have alluded to above, deservedly follow—from a similar cause. A little of this mixed with his mashed corn would have been very advantageous: given, as we have supposed it to be, it becomes dangerous.

The usual allowance of water *after* a full meal of food, is often productive of injury. Mr. Carmichael, whose writings during his life were of so much value, gives a very striking instance. A valuable farm horse in high health and condition, was served at mid-day, during a very busy seed time, with a quantity of bean chaff—or the hulls and leaves blown off in winnowing, called in Scotland and the north, *keavings*—which, though essentially flatulous in their nature, are safe for an evening or idle day's meal; but in the instance he describes they were given immediately after a feed of oats, and the horse having had after them his fill of water. He had not worked long before he manifested symptoms of violent pain, and in two or three hours died of a ruptured stomach. Horses will also suffer in a similar manner from a large feed of cold raw potatoes while hot,—from eating wheat, sometimes given by careless and roguish servants,—and even from clover heads, &c., when the horse is worked immediately after the stomach is entirely distended Frost bitten clover will sometimes produce disease and death.

Professor Dick mentions a case in his lectures, strongly illustrative of the great injury arising from over-feeding with very rich food. One owner lost twelve horses in an incredibly short space of time from this cause. The Professor knew that chemical action could not take place in an overloaded stomach; he recommended one half of the food to be given at a time—it had the desired effect. It must be admitted, however, that the injury to the horse is generally from the opposite cause, namely, under-feeding.

The post-horse, and such as are required to perform fast work, are

more liable to attacks of diseases of the brain, the nerves, and the lungs, simply because their work consists of rapid and powerful exertion; the farm-horse, the animal of long and steady exertion, to gripes, inflammation of the bowels and stomach, staggers; results, as I shall presently show, of a management unsuited to the character of the labour we require from them. The stomach of the horse is remarkably small—smaller in proportion to his size and the quantity of food he requires, than any other domestic animal. Nature intends for him a moderate supply of nutritious food, and that at short intervals,—wherein he materially differs from the ox, whose capacious stomach will contain food which will not be digested for hours. The post-horse, the hunter, and the carriage horse, have food of the most nutritious description, and the time during which they are worked is necessarily short, owing to the extreme exertion required: they return to their food, and, although their appetite may for a time be impaired, and their stomach and bowels affected by the general debility of the system, yet they recover their tone as soon as the rest of the frame admits of their taking food.

The farmer's horse, on the contrary, has food of a less nourishing nature; his rack is filled with straw, and, at best, with clover; the ploughman rises early, gives him a feed of corn, and leads him to his work, where he continues for seven, eight, and even nine hours, and his whole day's work is frequently completed before he is allowed to eat.

Of the best means of preventing these diseases in farm-horses, we will now treat. We have attributed the peculiar liability of farm horses to these diseases to mismanagement, with the exception of certain instances of peculiar formation of the animals; for, although the farmer must necessarily work his horse longer hours than the horse of rapid work can be worked, there is no necessity for depriving the animal so long of food. No horse should work more than five or six hours without a bait. In all these cases, whether proceeding from the nerves in horses where speed is required, or from stomach diseases in the case of draught horses, the cure, as has been hinted, must generally be left to the veterinary practitioner, whose chief object should be to empty the stomach. In severe cases, an ounce of laudanum and a drachm of pounded ginger, in a quart of warm ale, may be used with probable success in cases of gripes.

Mr. Carmichael, before mentioned, alludes also to the injury arising from horses eating damp or mouldy straw; and with equal force on the danger of the food, when cooked or boiled, becoming sour or stale

before it is given. If there is the least neglect, or want of cleanliness, this must be the case, and he who gives cooked food to horses, and suffers it to get soured, must immediately *scald* out all the mangers and vessels, and dust them with *lime*. This will at once annihilate the infection.

These are but a few of the diseases arising from mismanagement, but they are the most common; and a little care, exercised in time, will often prevent a long veterinary bill.

CHAPTER XV.

DISEASES AND THEIR REMEDIES.

This is not a work on the veterinary art, and therefore little will be expected on the medical or surgical treatment of the horse. In fact, even were it practicable in this work to give such a dissertation, it would be of no manner of service, but rather the reverse. The horse is too valuable, too *costly* an animal, to be rendered at any time the subject of blind quackery. In the preceding pages I have probably done more good than I could effect in ten volumes on the subject of disease, as I have shown, I hope, the means by which the access of disease may in many cases be *prevented*, a subject much more within the range of a horsekeeper than curing them.

There are still, however, simple cases in which you may advantageously become your own horse doctor, and I must give you some instruction relative to these.

Bleeding.—For instance, every man who keeps horses should know how to bleed, as timely bleeding will, in many instances, avert a dangerous fit of illness. Colds, caught by being suddenly turned out from a hot stable to a damp pasture, or in cold or wet weather, from being left out at night under similar circumstances, may lead to serious results, and, amongst others, fever, that may probably terminate fatally. Prompt bleeding will often avert this; and, perhaps, by the time a veterinary surgeon could arrive, the disease might have passed to another stage, in which bleeding would not only be too late, but improper. I shall, therefore, tell you how to bleed.

In bleeding, the *lancet* is doubtless preferable to the *fleam*, but *only in the hands of the veterinary practitioner*. The place for bleeding is usually the jugular vein. You have the horse blindfolded; smooth

the coat along the course of the vein; have the head of the animal turned from you by an assistant; with the fingers of the left hand, which holds the fleam, press upon the vein just sufficiently to bring it well into view. The best point is about two inches below the junction of the two branches of the jugular near the angle of the jaw; place the fleam exactly on the course of the vein, and strike smartly, but not too violently, on the back of the fleam. Bleed always from a *large orifice*, and for this purpose a large-bladed fleam is preferable; for a small quantity of blood, rapidly abstracted, will produce more valuable effect than a large quantity gradually drawn. When enough of blood has been taken, remove the pressure, bring the lips of the wound together, pass a pin through them, and roll some tow or silk thread round it, over the extremities of the pin. Secure the horse for a couple of hours, so that he cannot rub this off against the manger. There is a *spring lancet*, to be obtained from most cutlers, that is to be greatly preferred to the fleam. See that the blade be *clean*. Blood may be, for local purposes, abstracted from any superficial vein in the same manner.

Preparing a Horse for Physic.—Mr. George Holmes, late of Thirsk, furnished the editor with the following remarks, which are well worthy the most complete confidence. They will be found useful in preparing and treating a horse during physic, viz.:—Treatment 1st. He should have cold bran mash for about two days before any physic at all is given; and if fat or gross, it will be well to keep him short of hay the night previous to physicing. 2nd. The physic must be given about eight or nine o'clock in the morning, upon an empty stomach; about an hour after, the horse may have water and cold bran mash with oats; at four or five o'clock in the afternoon, he may have chilled water, and a little warm bran mash, with hay, if he will take it; early next morning the horse should have as much chilled water as he can take; and about eight or nine, if the physic has not operated, he should be walked out for ten or twenty minutes; but should the physic have previously operated, he must be kept still and quiet. 3rd. The day after the physic has operated, the horse should rest from all work; but should the physic continue to operate more than two days, means must be had recourse to, in order to stop the purging, otherwise there will be more harm than good done. Lastly, during physicing, the horse must by all means be kept warm.

Drenching.—You should also know how to administer a drench. Never use a *bottle* for this purpose, as the horse might bite away the

neck, and either swallow a portion of the glass, or otherwise injure himself. Have a cow's horn for this purpose, the larger end cut in a slanting direction; pass a halter into the mouth, and let an assistant keep the head elevated, by means of a stable-fork, as high as he is able; you then draw forth the tongue with your left hand, and, with the right, introduce the small end of the horn into the mouth, gently of course, over the tongue; a turn of the wrist will then empty the contents into the mouth; a simultaneous movement withdraws the horn and lets go the tongue. Keep the head up till all is swallowed; and if the horse retain some of the drench obstinately in the mouth, a slap on the nose will generally compel him to swallow it. Do not try to give too much at once; be sure to introduce the horn far enough, and to turn and withdraw it quickly, but without hurting the gums or lips of the horse.

Balls are given in a somewhat similar manner; but the head does not require to be held so high.

Accidents.—There are also some accidents that the proprietor of a horse may with safety look after himself. For instance, broken knees. When a horse falls and lacerates his knees, your first object should be, by careful washing, to remove all foreign substances from the wound. In the next place, endeavour to ascertain whether the joint cavity has been penetrated; but *you* must not use a *probe* for this purpose; but apply a poultice of linseed-meal, and when, in about eight or ten hours afterwards, you take it off, you will see a yellowish, glairy fluid, effused upon it, if the joint have been penetrated. Should this have been the case, send at once for the veterinary surgeon. When the joint has not been penetrated, get the lips of the wound together, and keep them so by a compress and bandages, which need not be renewed till the third day. The earlier the wound is closed the less mark will be left on the part.

Lameness.—It is sometimes difficult to detect the *cause* of lameness, especially of the anterior extremities; I would, however, say, that it is a safe criterion to watch how the horse moves. If he lift his feet, the *shoulder* is not the injured part; but if the *shoulder* be affected, the pain that any raising of the foot will occasion will cause him to drag the toe along the ground, instead of attempting to raise the foot. In *shoulder-lameness* you can do nothing but get the surgeon as soon as possible; in the other case, examine the *foot*, as found-nail or bad shoeing may be the exciting cause.

Stabs or Cuts.—Let your first care be to remove the cause, if any such remain in the wound; send at the same time for the nearest

veterinary surgeon. If there be much effusion of blood, strive to check it as much as possible, pending that gentleman's arrival; this may be best done by producing pressure on the bleeding vessels, and affusion of cold water. In some cases a solution of alum, or any other harmless astringent, may be useful. If the bleeding has ceased, commence a continuous and vigorous fomentation. It alleviates pain, arrests febrile symptoms, and brings the wound into a suppurative state. The very worst wound may often be cured by this simple treatment, instead of hot oils and violent stimulants, which kill more horses than they cure. Pricks in the sole are a very frequent cause of *Quittor*, and should, therefore, be timely looked to; but observe the manner in which the farrier removes the shoe for the purpose of examination. Do not suffer him to take it off *violently;* each nail should be *separately extracted*, and the shoe then removed, otherwise the affair will probably be made worse. When the shoe is thus *gently* removed, the appearance of matter or moisture on some particular spot will usually indicate the seat of pain.

Speaking of *farriers*, it may not be amiss to add, that many cases of lameness are induced by *bad shoeing*. Want of space renders it impossible for me to enter into a treatise on the *foot of the horse;* but it may be well to state, that the reader can purchase separately many excellent works on that most important subject. My own advice is, to send your horse always to a forge that is under the superintendence of a *veterinary surgeon* of respectable standing. It has been the practice at some forges to pare the foot and make a red-hot shoe do the rest of the fitting; the late Colonel Thornton observed once that a hot shoe had been applied to his horse's foot—"Tell the smith," said he to his groom, "if he dare to use a hot shoe to a horse of mine again, I will apply one to his." The Colonel caught poor Vulcan in the act shortly after, and literally fulfilled his threat.

Colic attacks a horse in many instances very suddenly, and requires immediate relief. Send for the veterinary surgeon; but, pending his arrival, give, as a drench, about two ounces of oil of turpentine with six drachms of laudanum, in a pint of castor or linseed oil, *warm*. After the spasms have disappeared, rub the horse dry, the belly and flanks especially; but I do not, as some do, recommend the horse to be trotted about—better let him rest. Give no *spirits, pepper*, or other *stimulants*.

There are often sad mistakes made in giving the colic drink to horses suffering from indigestion, or a tendency to inflammation of the bowels. The one is a simple attack, which it is desirable to meet at

once; the other a gradual undermining of the vital powers, which a veterinary surgeon alone can cope with. Now, the medicine for the one is poison to the other. Hence it is important to discriminate between the symptoms. Youatt gives a table which the horse-keeper ought to get off by heart:—

Symptoms of Colic.	Symptoms of inflammation of the bowels.
Sudden in its attack.	Gradual in its approach, with previous indications of fever.
Pulse rarely much quickened in the early period of the disease, but evidently fuller.	Pulse very much quickened, but small, and often scarcely to be felt.
Legs and ears of the natural temperature.	Legs and ears cold.
Relief obtained from rubbing the belly.	Belly exceedingly tender, and painful to the touch.
Relief obtained from motion.	Motion evidently increasing pain.
Intervals of rest.	Constant pain.
Strength scarcely affected.	Rapid and great weakness.

FITS.—You had better in this case send for the surgeon at once, if your horse be valuable; if otherwise, get rid of him.

GLANDERS.—In *purchasing* a horse, be very careful to ascertain that he is unaffected with this truly terrible disease, for which there is no cure, and which has, in so many frightful instances, been communicated both to man and other animals. Notwithstanding the awful nature of this disease, however—not a whit less dreadful than HYDROPHOBIA—dealers at fairs and other places will frequently endeavour to pass off a glandered horse upon an unwary customer. It is not long since an instance of this fell under my own observation at Fieldstown horse fair, in the county Meath. The trick usually resorted to is, stimulating the nostrils till the horse has snorted away all the matter lying in them, and then, by injections of an astringent nature, producing a temporary suppression of the discharge. Others cram a pledget of tow up the nostrils. These tricks may be detected by the animal's uneasiness, tossing of his head, efforts to sneeze, the red and vascular appearance of the interior of the nostril, but especially by the *fetid breath*.

FARCY and GLANDERS are, to a considerable extent, connected, as each, when neglected, or proving obstinate, is apt to run into the other. Like glanders, farcy is highly contagious, but is not, like that disease, wholly impregnable to the attacks of science. When the disease first appears—and its appearance is familiar to all about horses—give an aperient drench. If it be the *button-farcy*, touch the *buttons* with the extremity of a hot iron; if you have no budding-iron by you, the top of an Italian iron, such as laundresses use, may be made to

answer. Examine the sores daily, and as soon as they begin to slough, touch with a solution of a drachm of corrosive sublimate, in an ounce of spirit of wine, to which is added two drachms of creosote. Give internally a ball daily, composed of corrosive sublimate twelve grains, two drachms of powdered gentian, one drachm of ginger, and one ounce of powdered brimstone. As soon as the mouth begins to look affected by the mercury, or the animal is violently purged, omit the corrosive sublimate, but continue the remainder of the ball. Keep the animal in an airy situation, but one not exposed to draughts or damp, and feed on green meat, such as parsnips and carrots especially; which roots possess *sweetening* qualities of a high order.

Lampas, or swelling of the *bars*, or vacant spaces between the tusks and grinders—an affection very common to young horses when teething—will generally yield to mild alteratives and cooling drinks; but if it do not, a few slight incisions with a lancet or penknife will produce relief, taking care to confine your scarification to the *outside edge*, so as to avoid the palatine artery and vein. Do not permit the bars to be *fired*.

Strangles, also a common disease of young horses, presents symptoms so like those of glanders, as to be sometimes confounded with that disease. Strangles, however, may be distinguished from glanders by the formation in the former of a continuous tumour in the hollow under the lower jaw. The treatment consists in bringing this swelling to a head, by means of a blister; as soon as it is soft on the top, it should be opened, and that by *three incisions*. The sore may then be dressed for a few days with common digestive ointment. Cooling drinks, as cream of tartar and nitre, may be given with advantage; if there be appearance of fever, or affection of the chest, send for the surgeon, as the treatment is now beyond your skill. This, however, is rarely the case.

Poll Evil, a swelling of the poll, caused by the horse striking it against the lower edge of the manger, when raising it suddenly after stooping or by pulling upon his halter. In most cases, all attempts to prevent suppuration are useless, and I think it best to endeavour at once to hasten it. Then open the tumour by means of a seton, which should be passed in at the top, penetrate through the bottom, and pass out at the side of the neck, just below the abscess. Foment with warm water, and keep the parts clean.

Roaring, most generally the consequence of malformation of the larynx, but sometimes occurring as a sequel to strangles, and sometimes arising from palsy of the muscles connected with the larynx.

The use of a strap for the cure of crib-biting is also an occasional cause. I know of no cure, and am disposed to think that, in all cases, *roaring* is beyond the reach of treatment. I would also advise you not to *breed from* a roarer, as this defect is, in many cases, transmitted to the progeny.

SADDLE-GALLS might have been prevented by using properly adjusted and well stuffed harness or collars. Rest the horse, bathe twice daily with warm water, and after each bathing dress with spermaceti ointment.

INFLAMMATION.—When you find a horse dull, listless, off his feed, coat staring, chest and nose hot, extremities cold, some attack of an inflammatory nature is at hand. Bleed from a large orifice until you find the pulse sensibly dimininish; administer a purgative, but meanwhile let the veterinary surgeon be sent for with all speed.

SPAVIN.—An enlargement of the little sacs of mucus placed between the tendons to prevent friction. The most common place for this to occur is at the inside of the hock, at the bend. This is called *hog-spavin.* When this becomes so much enlarged as to produce compression of the vein passing over it, between it and the integuments, the vein shares in the distension, and it becomes *blood-spavin.* In general, a spavined horse is lame, but not invariably so. Blistering, or perhaps *firing*, is the only cure on which I place any reliance.

"DISTEMPER," or more correctly epidemic catarrh, generally commences in shivering, then heat of mouth and nostrils, cough, red and heavy eye, redness of the membrane of the nose. From the commencement, there is generally, but not invariably, a discharge from the nostrils, which, in neglected cases, becomes fetid and ropy. This disease requires too much judgment, and too much knowledge of the varied treatment called for in each different stage, for me to give you any advice further than this: if you have detected it at *its very commencement,* bleed copiously, and give a strong purgative,—the veterinary surgeon being also sent for. Do not suffer yourself to be made a victim of quacks. There is no *specific* for this disease, and, under improper treatment, it is more frequently fatal than otherwise. The early attendance of a veterinary surgeon in this disease is the more desirable, as its early symptoms are extremely like those of

MALIGNANT EPIDEMIC, which latter disease rapidly runs into gangrene, and terminates in death; and the former disease frequently passes into the latter, when not properly combated at first.

BROKEN WIND.—Incurable; but may be alleviated by *condensing the food*—reducing as much as possible the *quantity* necessary to be con-

sumed, by giving the necessary nutriment in as small a compass as you can; as, for instance, more oats and less hay. Keep the bowels moderately open, and never work upon a full stomach. Feeding upon carrots will also be found beneficial.

WORMS.—The symptoms show themselves in the appearance of the vermin in the excrements, or creeping out the anus. Give two drachms of tartar emetic, with twenty grains of powdered ginger, every morning, *fasting*. When there appears much irritation about the anus give a strog dose of aloes, and *inject* linseed oil.

JAUNDICE, known by the yellowness of the eyes, mouth, and of all naked portions of the skin, with high-coloured urine, dulness, and loss of appetite. Bleed; give twice daily, until the bowels have been freely opened, two drachms of aloes, with one drachm of calomel, warm white-water or thin gruel. Keep the stable cool; feed on green meats.

DIFFICULTY OF STALING.—Give plenty of warm drink; linseed boiled in plenty of water; turpentine made into a ball with linseed meal; half an ounce of turpentine and half a drachm of ginger, with as much of the meal as is required to form the ball.

IN PROFUSE STALING, the opposite of the preceding, the treatment should be bleeding, purging; every kind of counter irritation; astringent medicines; feed on carrots.

WINDGALLS.—An enlargement about the fetlock, caused by the enlargement of the mucus sacs, spoken of already in reference to spavin. Treatment the same.

RINGBONE.—A deposit of bony matter on the cartilages and bones of the pastern and foot. The only cure is *firing*, and even that is only occasionally successful.

THOROUGH-PIN, analogous to windgalls and spavin, being a similar enlargement above the hock, between the extensor muscle of the hock and the flexor tendons of the foot. Mode of treatment same as for windgalls.

CURB is the consequence of a strain of the tendon or its sheath, or the circular ligament which holds it in its place. It appears under the form of an enlargement at the back of the hock, two or three inches below its point. Bleed from the subcutaneous vein nearest the seat of injury; use emolient fomentations. Firing is sometimes, but not invariably, advisable. A veterinary surgeon must judge of this.

STRINGHALT.—Cause and cure alike obscure. It is usually supposed to be an excess of nervous energy, and is usually produced by effort for heavy work. It does not seem to impair the health, nor

even the capability for work in the animal; and it is objectionable mainly for the ugly and awkward appearance it presents. There does not appear to be any specific for the complaint.

Grease commmences in inflammation of the skin of the heels, proceeding to excoriation, cracking, ulceration, and fungus. Cleanse well with soft-soap and water; use a solution of alum, or sulphate of copper, as a lotion. If there be much foulness, a carrot poultice is valuable. Keep the bowels well open.

Corns.—Resulting from bad shoeing, and severe work on hard roads. The effort of nature to throw out a hard substance, to counteract this, produces a hard, horny substance, which presses on the sensitive part of the foot, and causes lameness. Rest from this, and carefully cutting out, and gradual work on soft ploughed land, will usually eradicate these, even if they are of long standing. The editor remembers an old coach-horse so lame with these as to be sold for £4, who became so thoroughly sound and capable of work, from the transfer to the plough, that he worked for sixteen years, doing regular farmer's work ever afterwards, without lameness or apparent inconvenience.

Overreach.—The bruise given by an awkward blow of the toe of one foot against the heel of another. Cleanse, and fasten a pledget of tow, dipped in friar's balsam, upon the wound. When neglected, Overreach will run into Quittor, which will require veterinary care.

Feeling that the above brief hints are all that would be likely to aid the amateur in the treatment of his horse, I conclude with an earnest reiteration of my advice—Whenever a horse worth saving displays symptoms of illness, send, without any loss of time, for—not a village farrier, or cattle doctor—but a regularly educated, professing Veterinary Surgeon.

THE END.

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